



186

# SERVICE MANUAL **1180 DC**



**marantz**

**model 1180DC**

*Stereo Console Amplifier*

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## 1. POWER AMPLIFIER ADJUSTMENT

### 1.1 DC-OFFSET Adjustment

Connect VTVM to JN01 and JN05 (or ground) and adjust left channel R739 until the meter indication reaches 0 mV ( $\pm 5$  mV). Similarly, connect VTVM to JN04 and JN06 (or ground) and adjust right channel R740 until the meter indication reaches 0 mV ( $\pm 5$  mV).

## 2. TEST EQUIPMENT REQUIRED FOR SERVICING

Table 1 lists the test equipment required for servicing the Model 1180DC Stereo Console Amplifier. The wattmeter, AC voltmeter, and variable autotransformer may be assembled as a test fixture as shown schematically in Figure 1. The load resistors and AC ammeter may be assembled into a second test fixture as shown in Figure 2.

Table 1. Test Equipment Required for Servicing

Item	Manufacturer and Model No. (or equivalent)	Use
Distortion Analyzer and Audio Oscillator	Sound Technology, Model 1700B (NOTE: Less than 0.002 percent residual distortion is required.)	Measures distortion, voltage of amplifier output and sinewave source
Oscilloscope	Tektronix, Model 503 Data, Model 555	Waveform analysis and troubleshooting.
VTVM	RCA Senior Volt-Ohmyst, Model WV-98C	Voltage and resistance measurements.
AC Wattmeter	Simpson, Model 390	Monitors primary power consumption of amplifier.
AC Ammeter (0 to 10 amps)	Commercial Grade	Monitors amplifier output under short circuit condition.
Line Voltmeter (0 to 150V AC)	Commercial Grade	Monitors potential of primary power to amplifier.
Variable Autotransformer (0 to 140 V AC, 10 amps)	Powerstat, Model 116B	Adjusts level of primary power to amplifier.
Shorting Plug	Use phono plug with 600 ohms across center pin and shell.	Shorts amplifier input to eliminate noise pickup.
Power Supply Bleeder Resistor (10 ohms at 1 W)	Commercial Grade	Discharges power supply filter capacitors prior to disassembly or resistance measurements.
Output Load Resistor ( $8 \Omega \pm 0.5\%$ , 250W)	Commercial Grade	Provides 8-ohm load for amplifier output termination.
Output Load Resistor ( $4 \Omega \pm 0.5\%$ , 250W)	Commercial Grade	Provides 4-ohm load for amplifier output termination.
Output Load Capacitor (0.5 mfd)	Mylar	Provides capacitive load for instability checks.
AC Power Control Box	Optional Item. Fabricate in accordance with Figure 1.	Monitors and controls primary power for amplifier.
Amplifier Output Load Box	Optional Item Fabricate in accordance with Figure 2.	Provides various amplifier loads and can monitor shorted output.

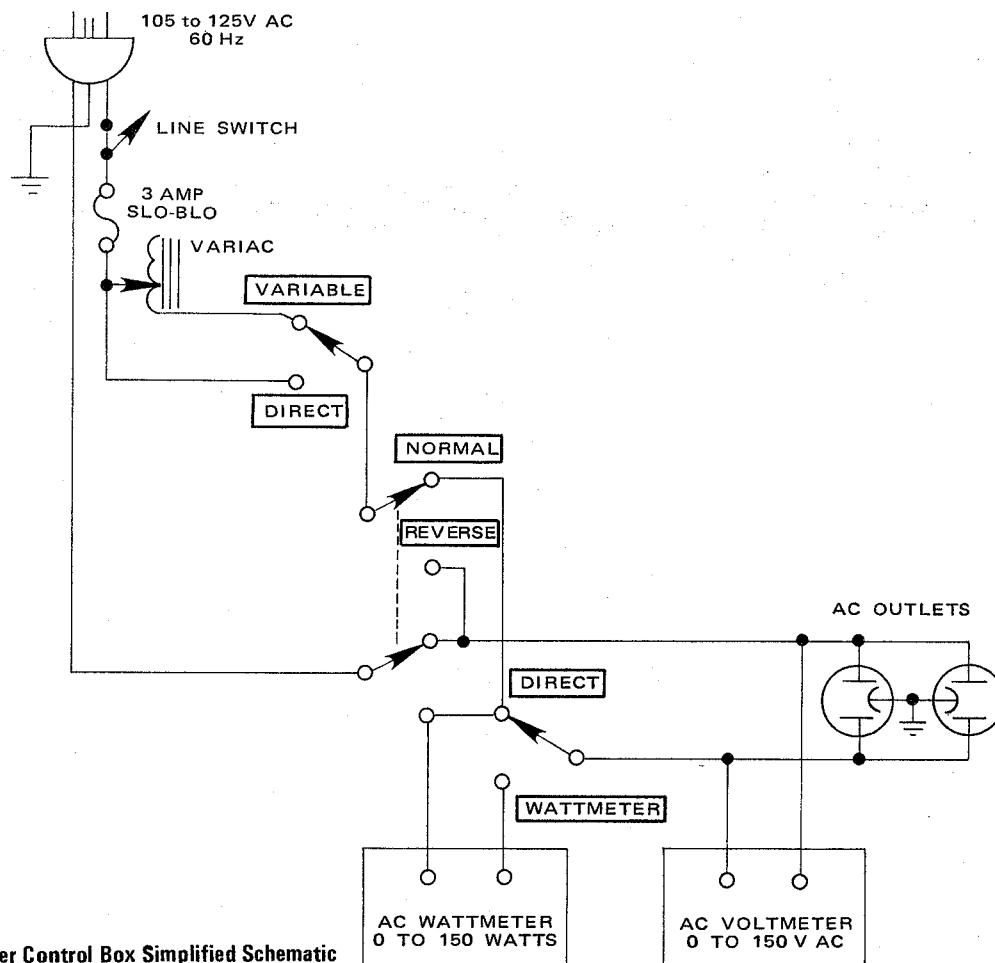


Figure 1. AC Power Control Box Simplified Schematic

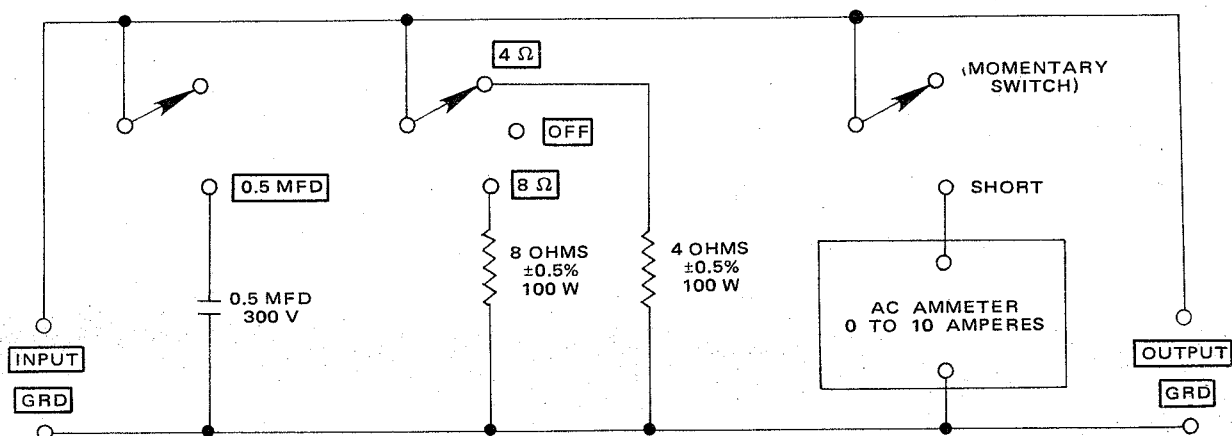


Figure 2. Amplifier Output Load Box Simplified Schematic



# 1. f

## 1.1 I

Conn  
left c  
(±5 n  
groun  
indic

### 3. VOLTAGE CONVERSION

#### ● EUROPEAN MODEL ONLY

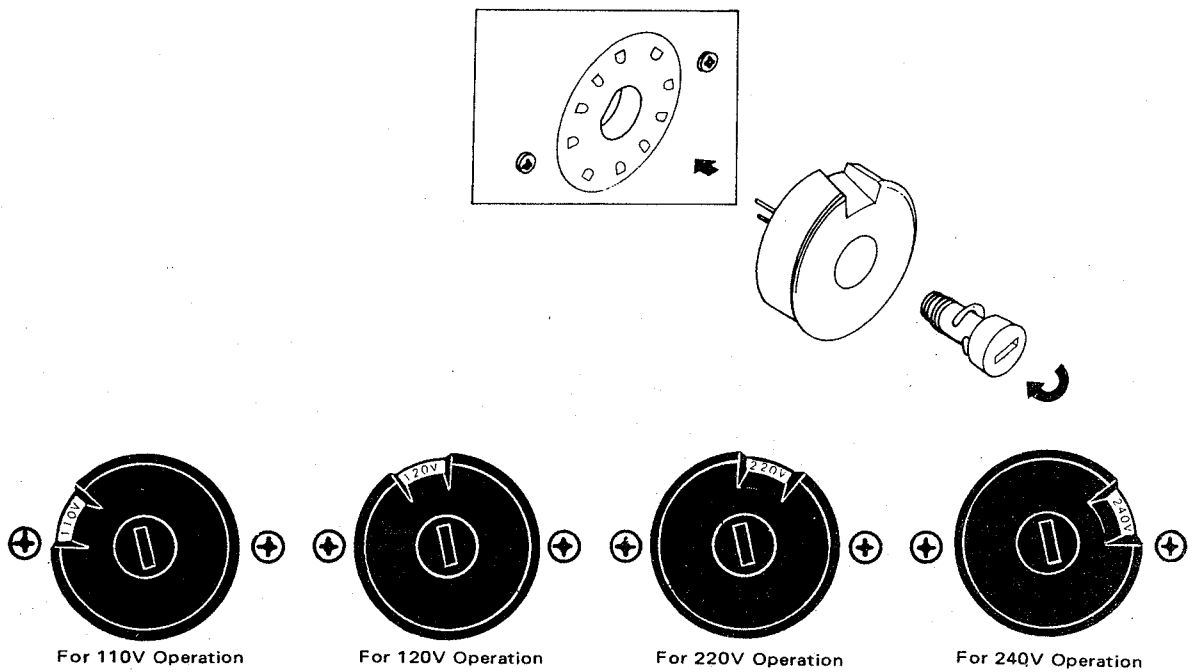
This Model is equipped with a universal power transformer to permit operation at 110, 120, 220 and 240 V AC 50/60 Hz.

To convert the unit to the required voltage, set the plug as illustrated so that you can adjust the voltage as required.

#### CAUTION

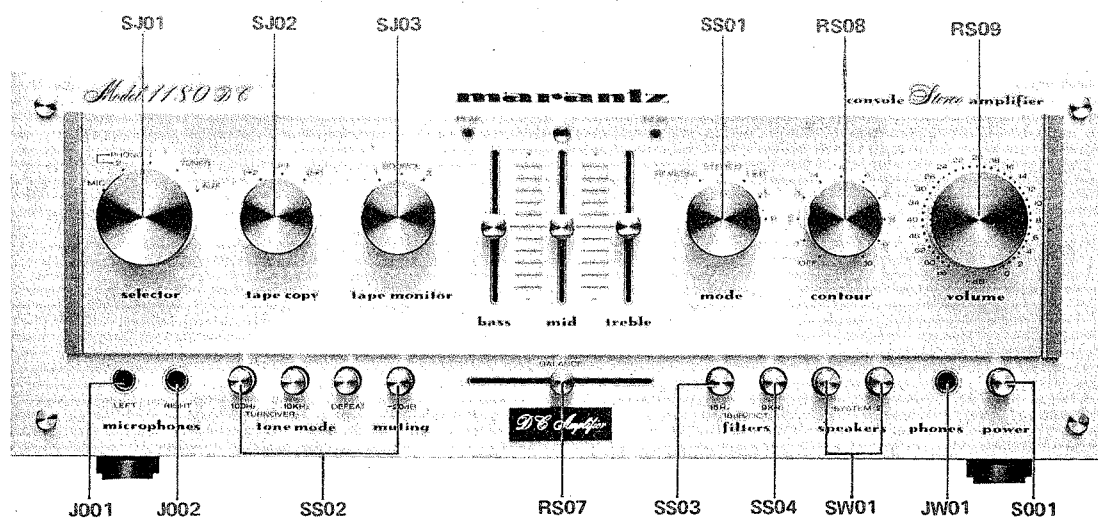
DISCONNECT POWER SUPPLY CORD FROM AC OUT-LET BEFORE CONVERTING VOLTAGE.

Figure 3. Voltage Conversion Chart

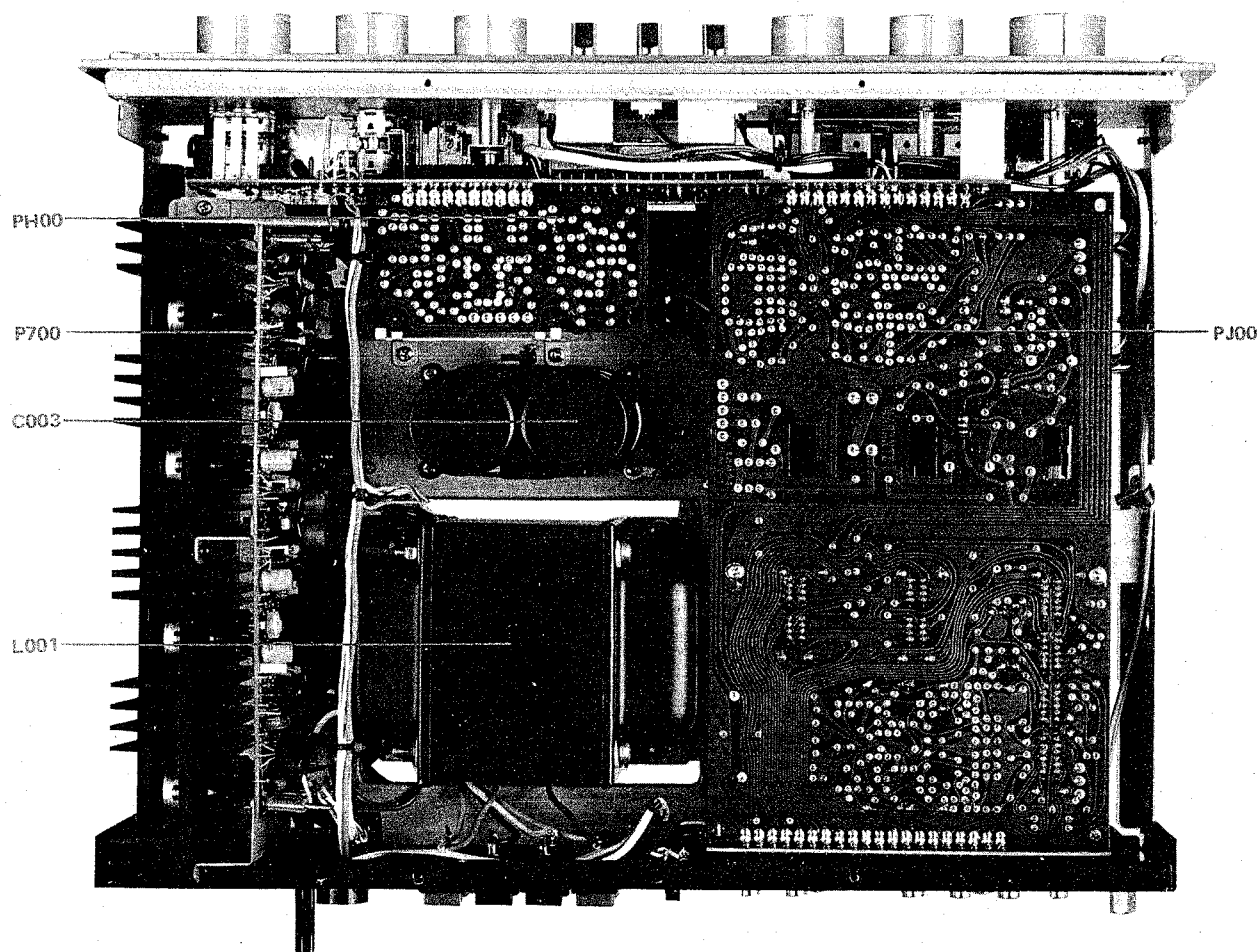


## 4. MAJOR COMPONENT LOCATIONS

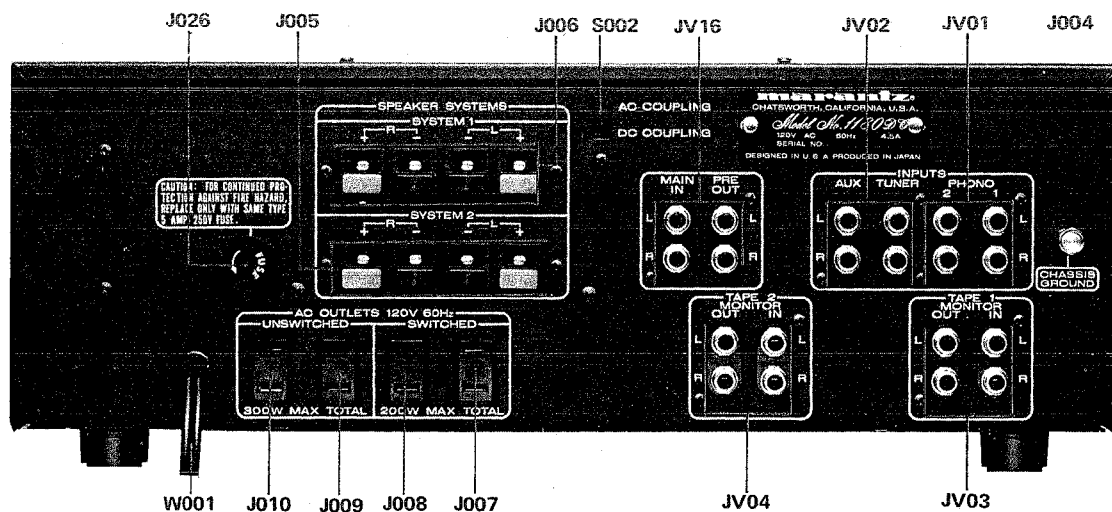
### 4.1 Front Panel Adjustment and Component Locations



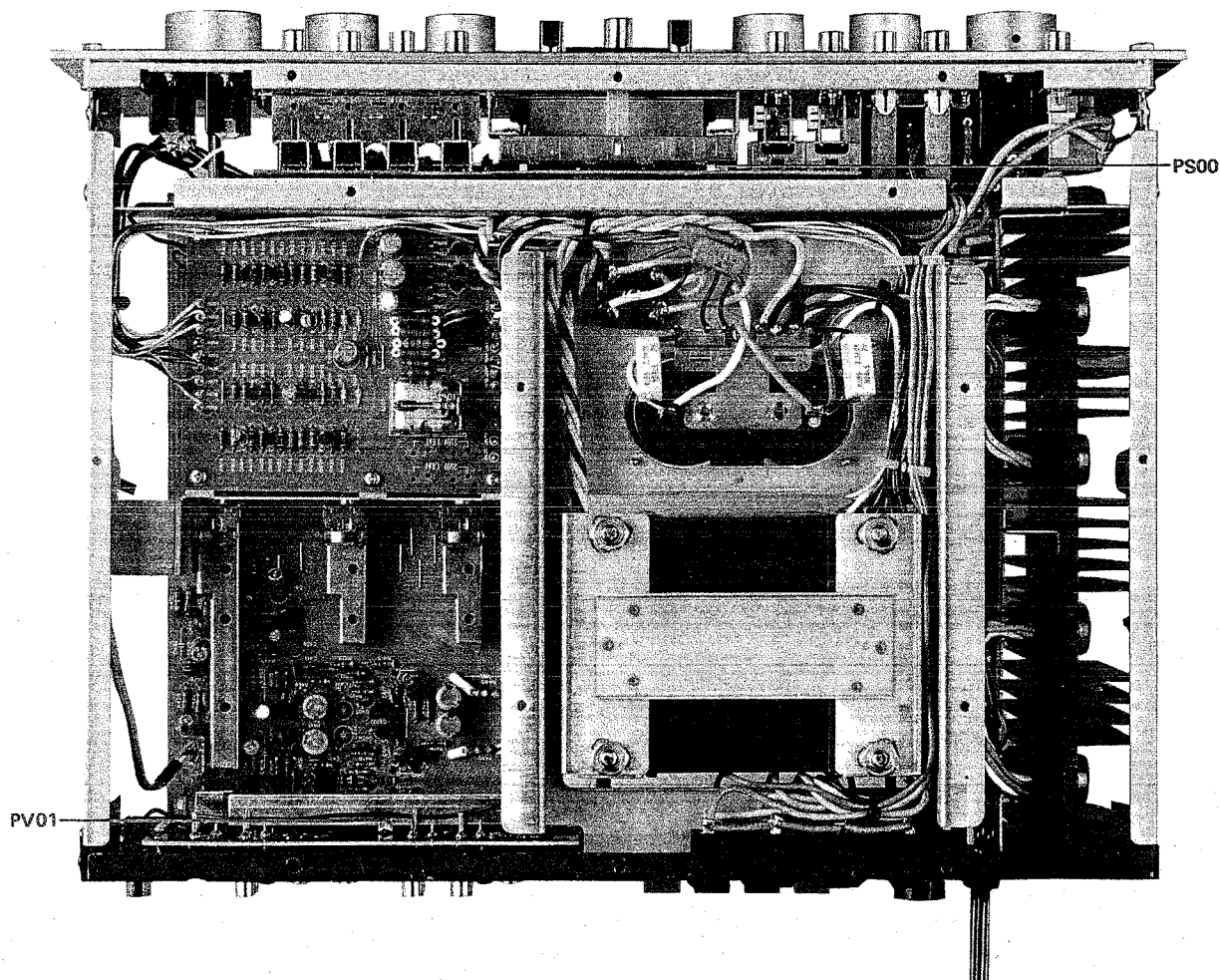
### 4.2 Main Chassis Component Locations (Top View)



#### 4.3 Rear Panel Adjustment and Component Locations

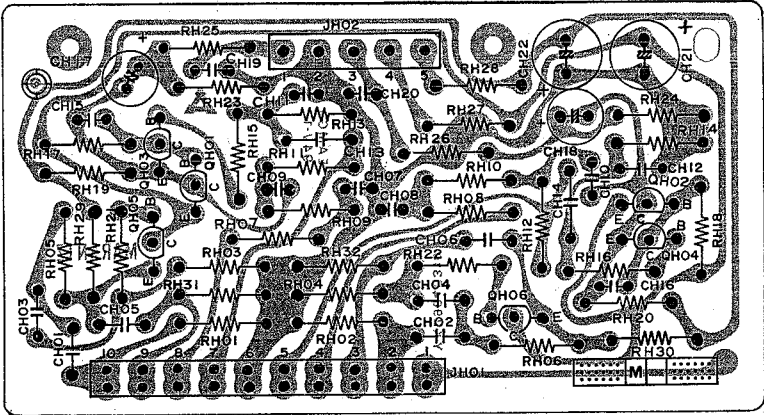
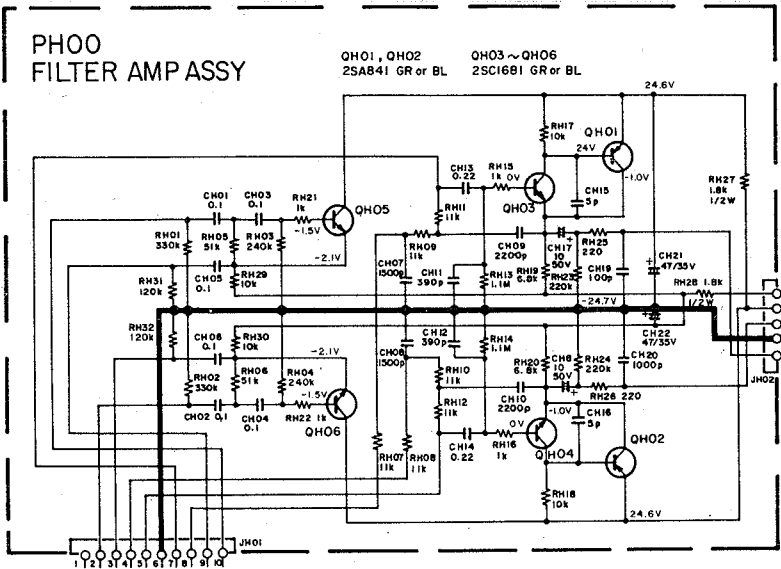


#### 4.4 Main Chassis Component Locations (Bottom View)

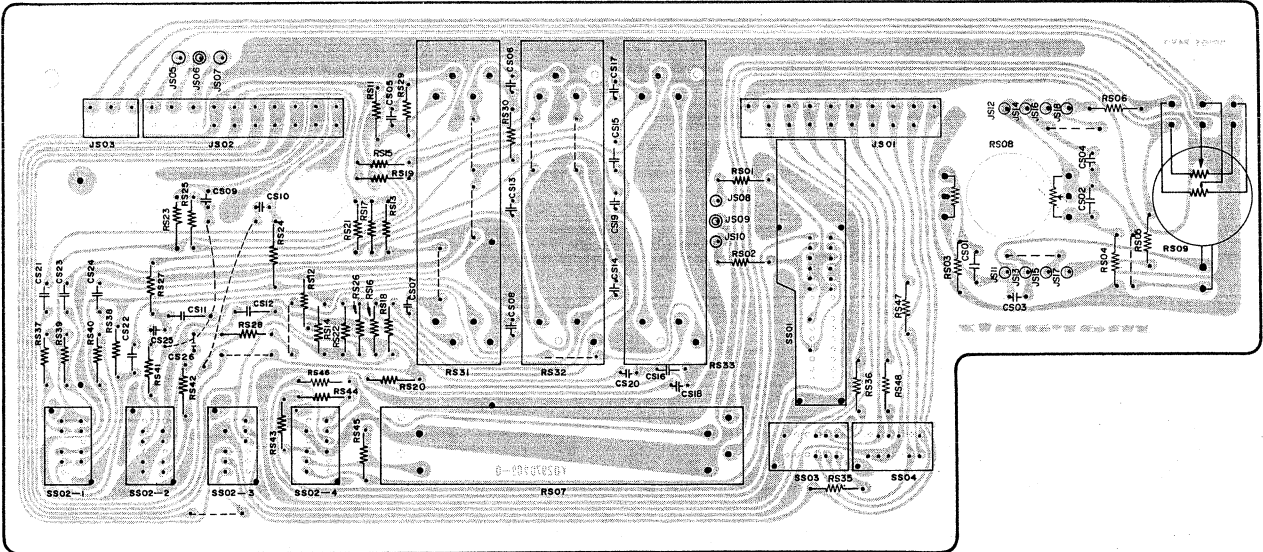
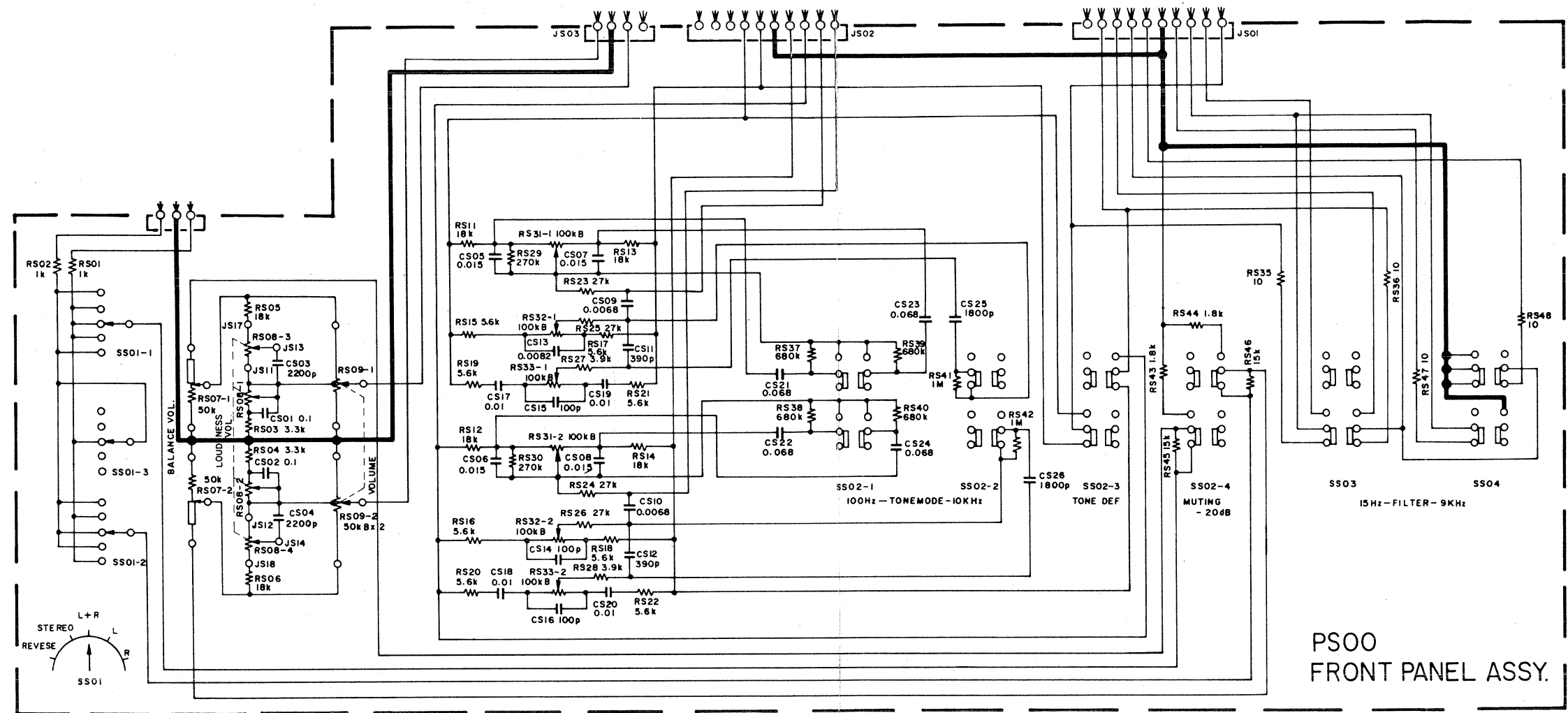


5. DIAGRAM AND COMPONENT LOCATIONS

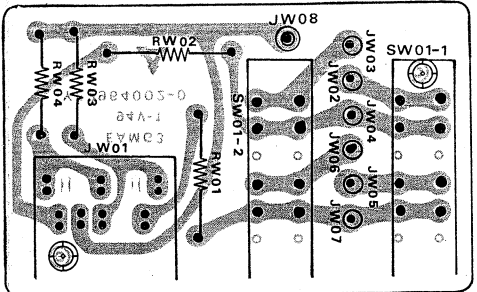
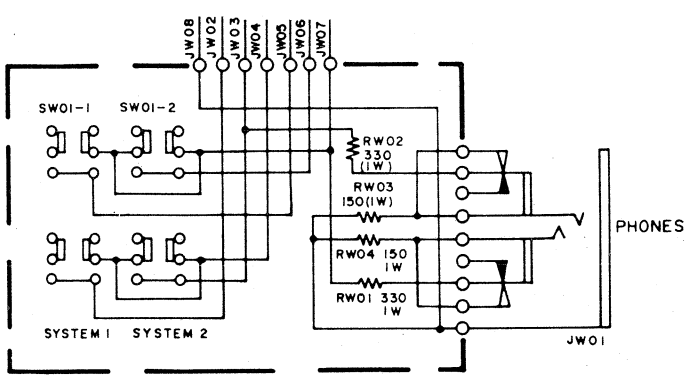
5.1 Filter Amp. Assembly (PH00) Schematic Diagram and Component Locations



5.2 Front Panel Assembly (PS00) Schematic Diagram and Component Locations

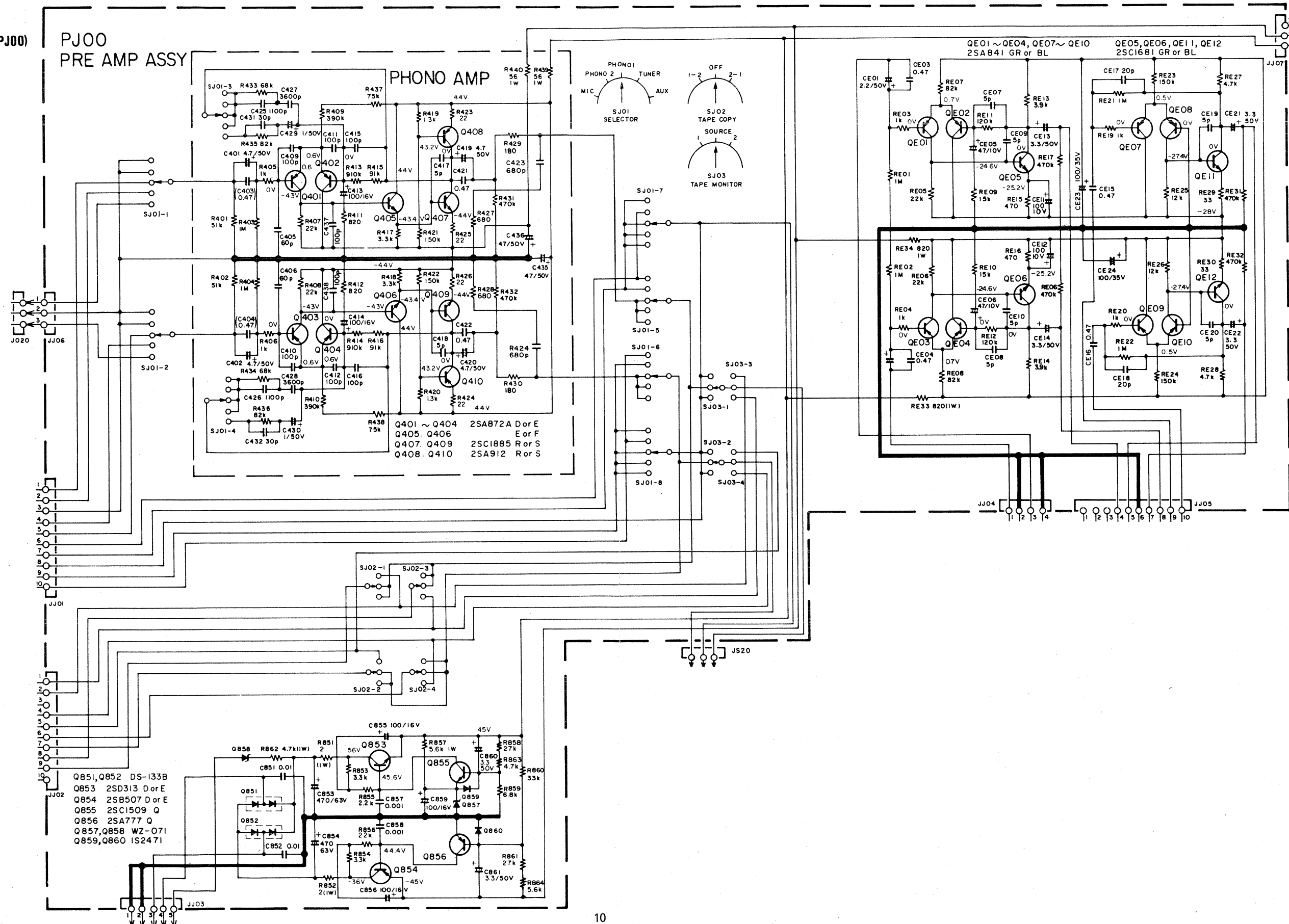


5.3 Speaker Switch Assembly (PW00) Schematic Diagram and Component Locations

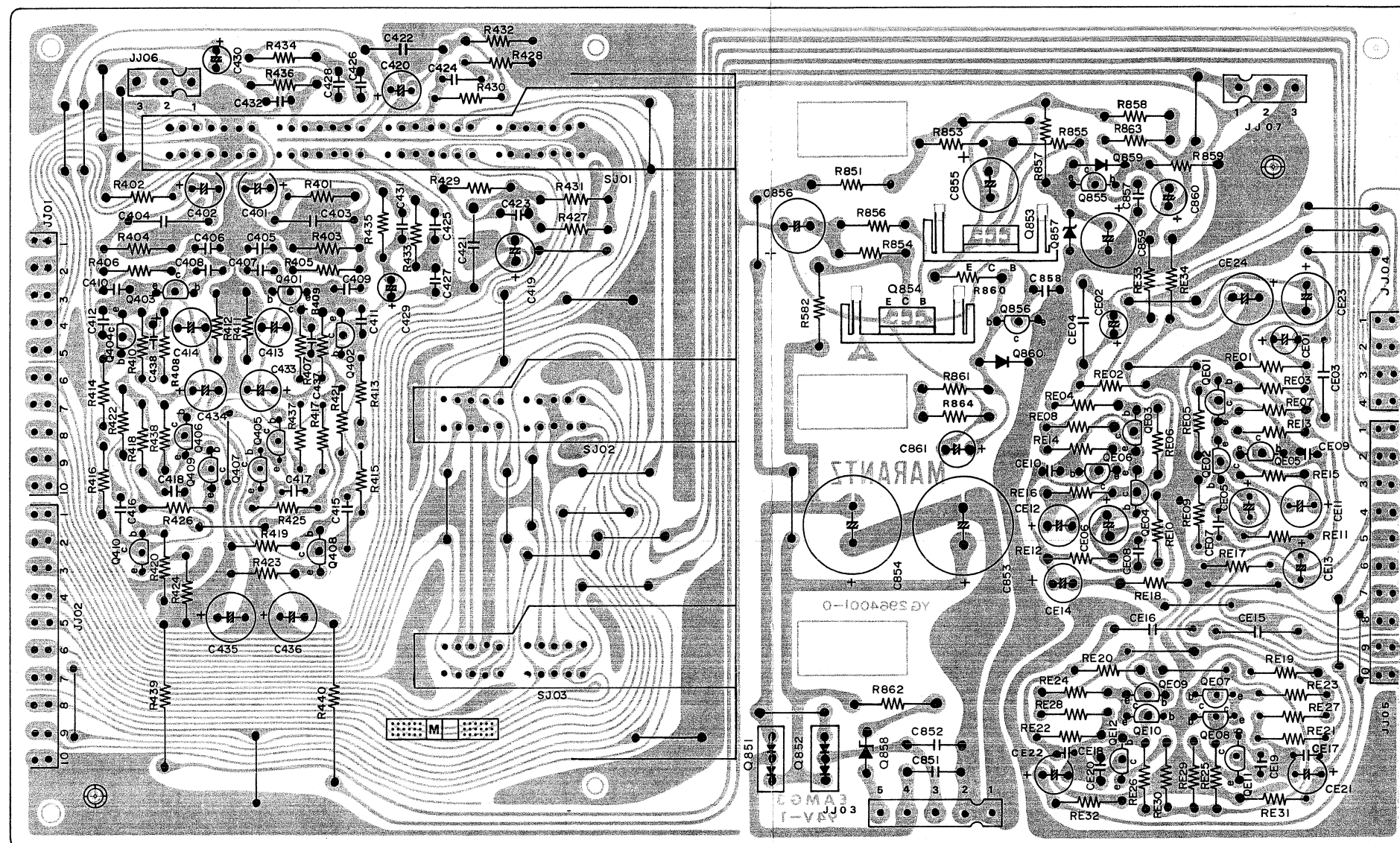




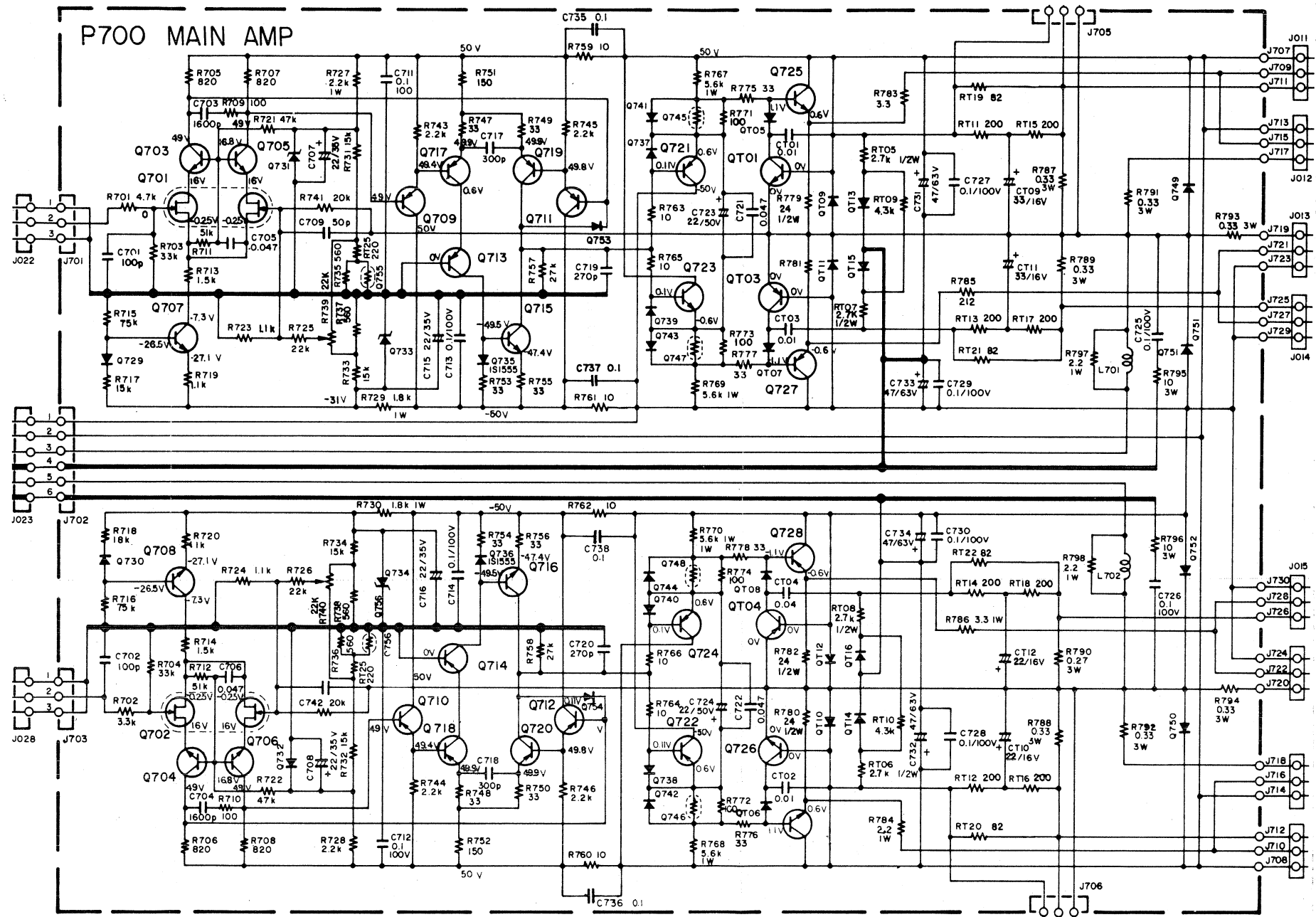
5.4 Pre Amp. Assembly (PJ00)  
Schematic Diagram



• Pre Amp. Assembly (PJ00) Component Locations

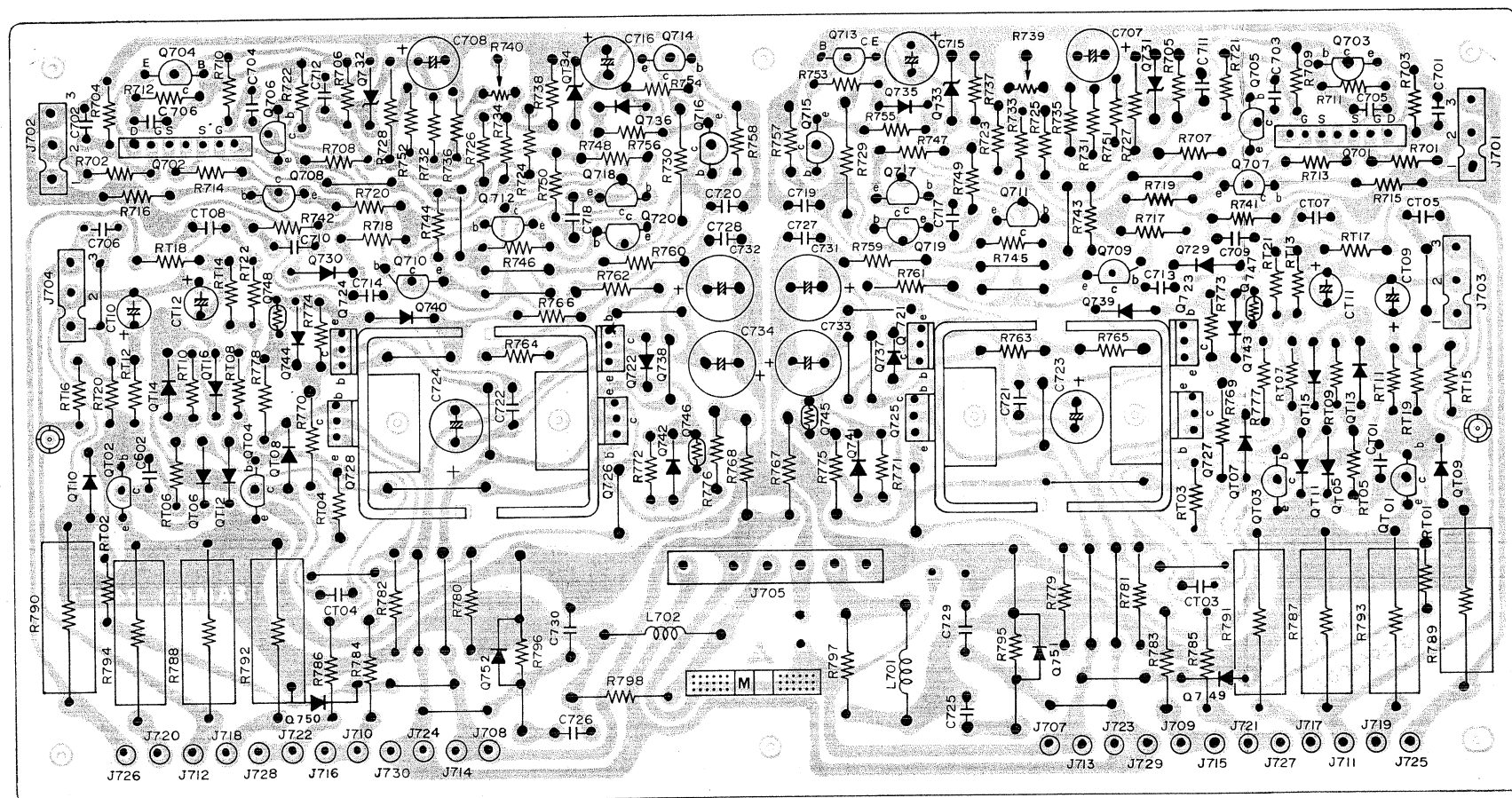


5.5 Main Amp. Assembly (P700) Schematic Diagram



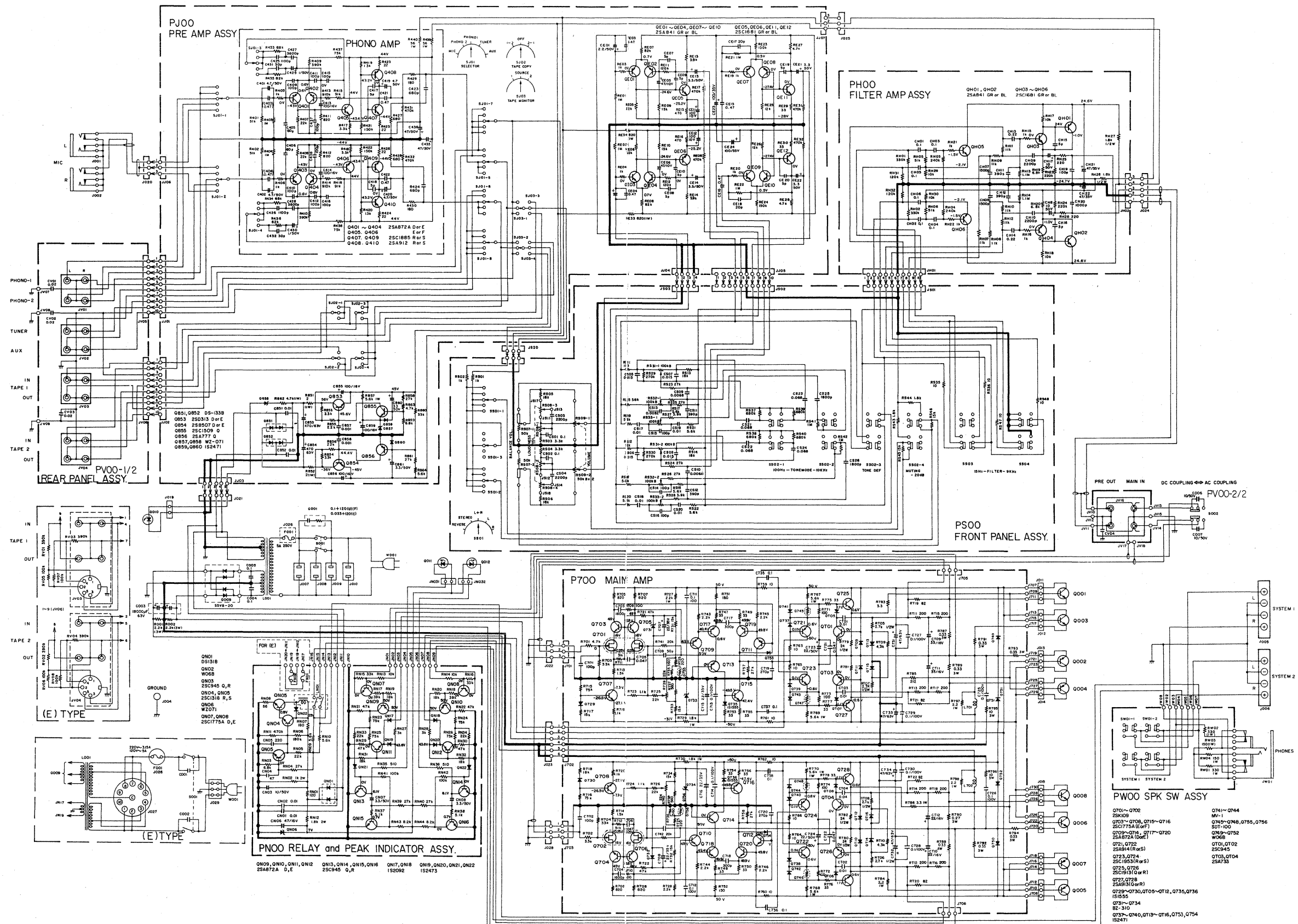


• Main Amp. Assembly (P700) Component Locations



# 8. SCHEMATIC DIAGRAM

Model 1180DC

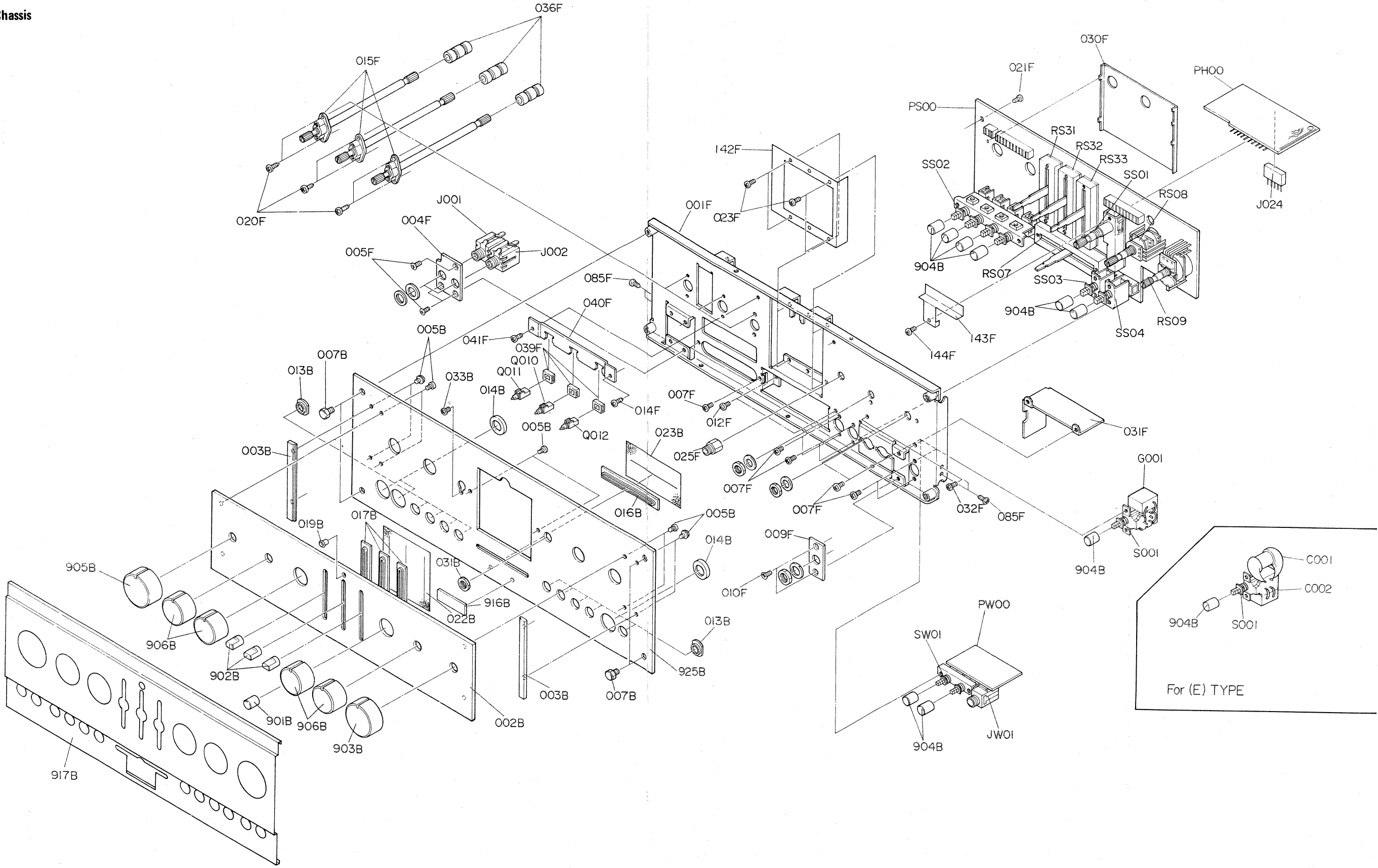


## 9.1 Cabinet

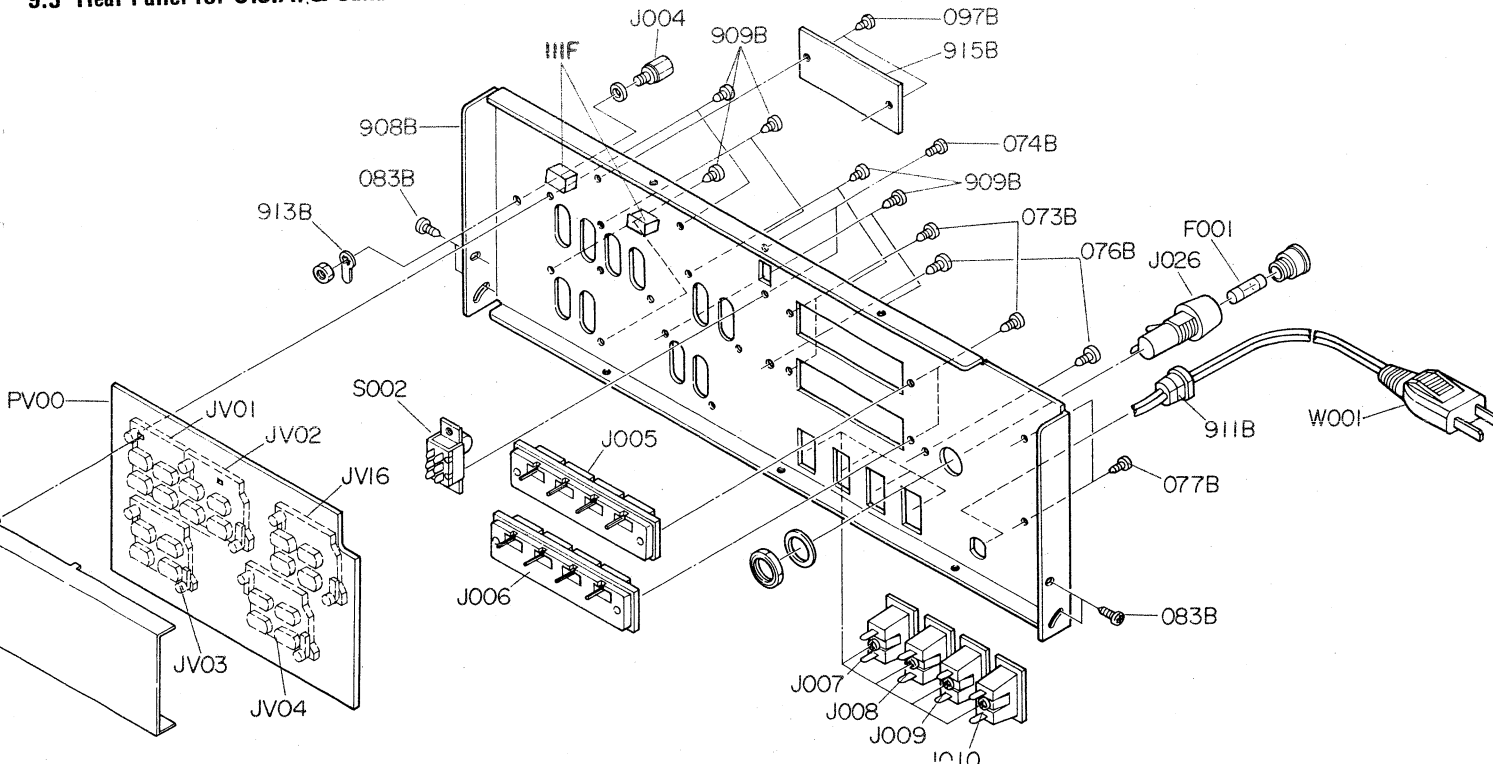




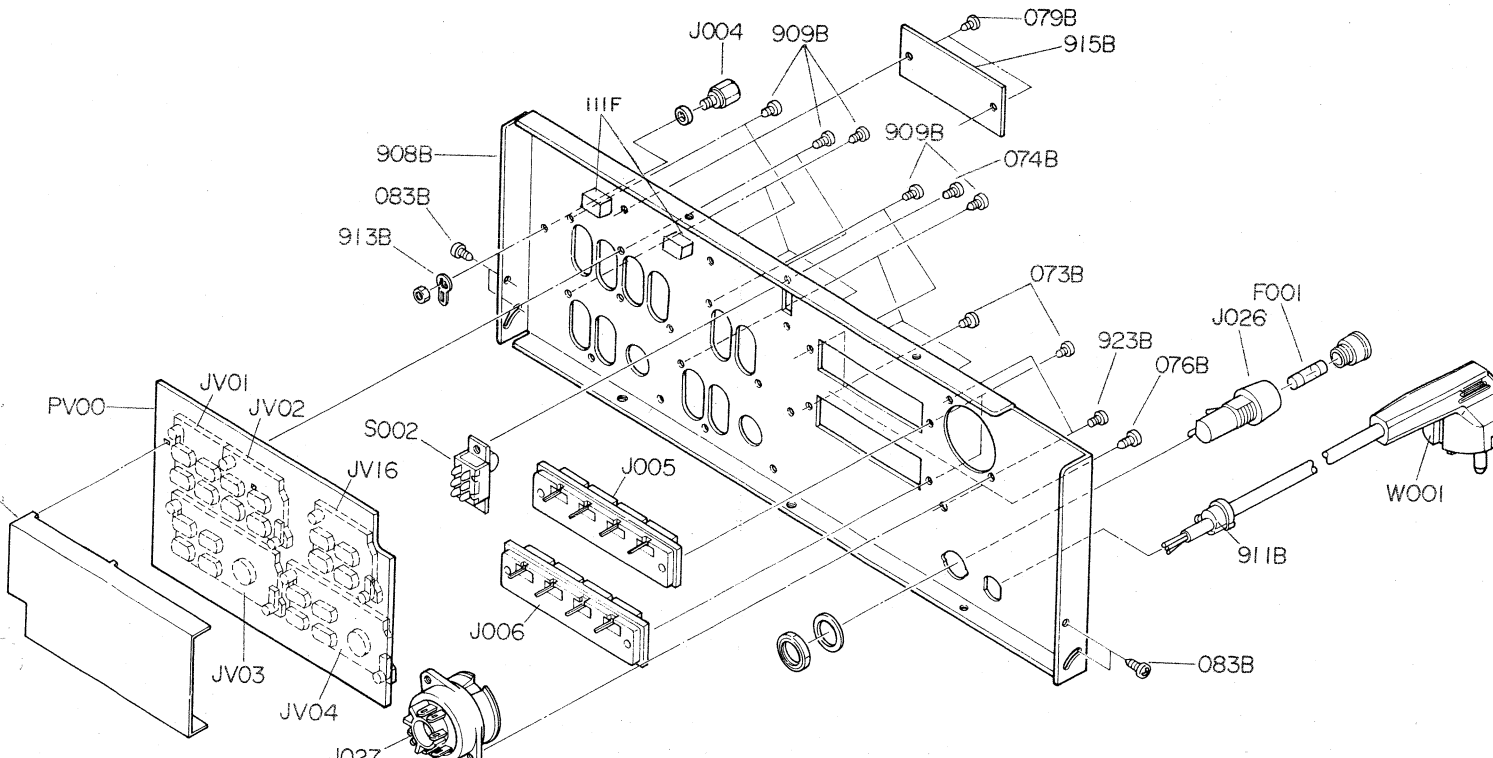
9.2 Chassis



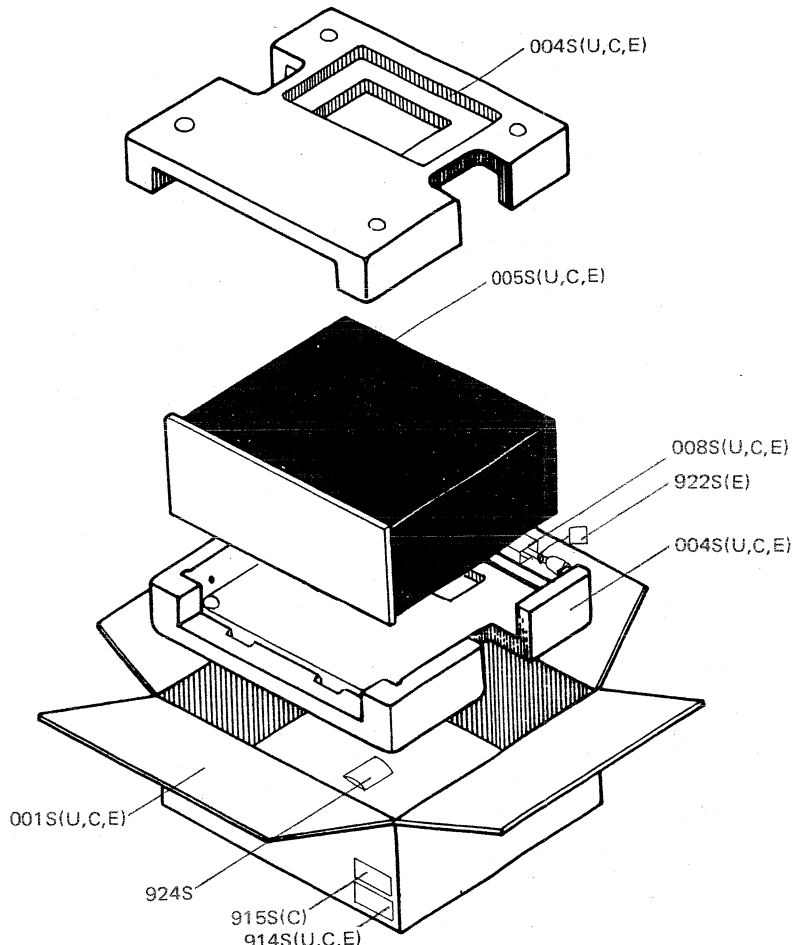
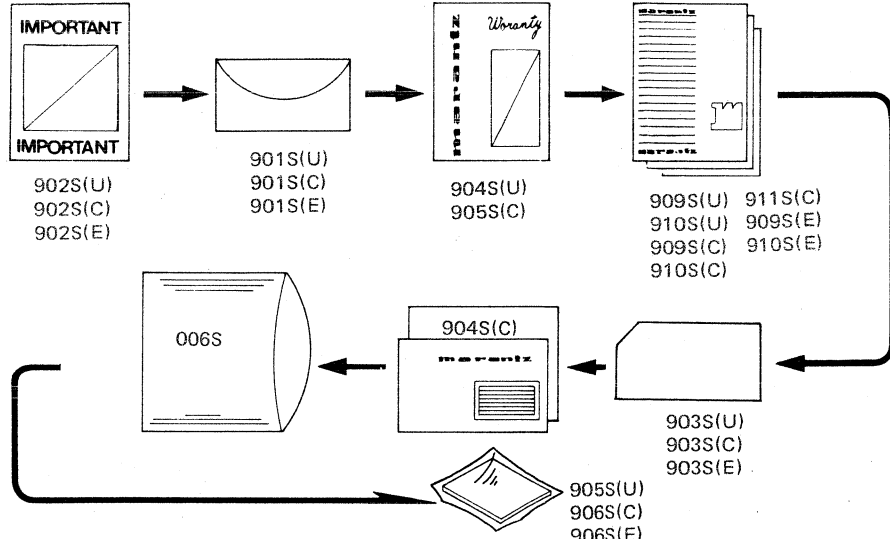
### 9.3 Rear Panel for U.S.A. & Canadian Models



## 9.4 Rear Panel for European Model



## 10. PACKING MATERIAL EXPLODED VIEW



- (U) for U.S.A.
- (C) for Canada
- (E) for Europe

11. PARTS LIST

- (U) for U.S.A
- (C) for Canada
- (E) for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
A	1	1	1	2976063400	Front Panel Assembly
002B	1	1	1	2976063020	Escutcheon
003B	2	2	2	2965063050	Escutcheon
005B	10	10	10	51480306A9	F.Washer Screw, F3 x 6
013B	9	9	9	2978259012	Bushing
014B	3	3	3	2978259020	Bushing
016B	1	1	1	2926259040	Bushing
017B	3	3	3	2970259010	Bushing
019B	1	1	1	2979259022	Bushing
022B	1	1	1	2970303010	Mask
023B	1	1	1	2926303020	Mask
916B	1	1	1	2979251040	Badge
917B	1	1	1	2964053012	Cover
925B	1	1	1	2976063012	Escutcheon
PJ08	22	22	22	2933118020	Spacer
PJ09	4	4	4	2933118010	Spacer
PJ11	37	37	37	75061251P0	Jumper
PS11	12	12	12	75061251P0	Jumper
PW08	8	8	8	2933118020	Spacer
P007	4	4	4	3444118050	Spacer
P708	72	72	72	2933118020	Spacer
P711	26	26	26	75061001P0	Jumper
P712	6	6	6	75061501P0	Jumper
001F	1	1	1	2976160012	Bracket
001S	1	1	1	2976801010	Packing Case
004F	1	1	1	2970120010	Insulator
004S	2	2	2	2963809020	Cushion
005F	3	3	3	51340306B0	F.H. Tapped Screw, F3 x 6
005S	1	1	1	9014550180	Polyethylene Bag
006S	1	1	1	9013025010	Polyethylene Bag
007B	4	4	4	52017069J0	H. Head Bolt
007F	10	10	10	51100306A9	B.H.M., Screw, B3 x 6
008S	1	1	1	2864804010	Sleeve
009F	1	1	1	2970120020	Insulator
010F	2	2	2	51340306B0	F.H. Tapped Screw, F3 x 6
012F	2	2	2	51100306A9	B.H.M. Screw, B3 x 6
015F	3	3	3	2964112500	Shaft
020F	6	6	6	51280308B0	B.H. Tapped Screw, B3 x 8
021F	1	1	1	51280306B0	B.H. Tapped Screw, B3 x 6
023F	4	4	4	51100306A9	B.H.M. Screw, B3 x 6
025F	1	1	1	2970101010	Support
030F	1	1	1	2970109020	Shield
031B	1	1	1	53118179A0	Hexagon Nut
031F	1	1	1	2970109010	Shield
032F	2	2	2	51100306A9	B.H.M. Screw, B3 x 6
033B	1	1	1	51302608B0	P.H. Tapped Screw, P2.6 x 8
036F	3	3	3	2963125010	Joint
039B	1	1	1	2963257010	Lid

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
039F	3	3	3	2978259060	Bushing
040B	6	6	6	2979259030	Bushing
040F	1	1	1	2976160020	Bracket
041B	2	2	2	51280306U0	B.H. Tapped Screw, B3 x 6
041F	2	2	2	51280306B0	B.H. Tapped Screw, B3 x 6
042B	2	2	2	51280306U0	B.H. Tapped Screw, B3 x 6
044B	4	4	4	51480406S9	F. Washer Screw, F4 x 6
048B	1	1	1	2964257013	Lid
050B	4	4	4	2932057010	Leg
051B	4	4	4	51570410S0	P. Tapped Screw, P4 x 10
061B	3	3	3	51280410U0	B.H. Tapped Screw, B4 x 10
061F	1	1	1	2976105016	Chassis
062B	3	3	3	51280410U0	B.H. Tapped Screw, B4 x 10
062F	2	2	2	2886005030	Clamper
063B	2	2	2	51280410U0	B.H. Tapped Screw, B4 x 10
063F	4	4	4	51490612A9	L. Washer Screw, L6 x 12
065B	2	2	2	51280410U0	B.H. Tapped Screw, B4 x 10
066B	4	4	4	51280410U0	B.H. Tapped Screw, B4 x 10
067F	4	4	4	51280306B0	B.H. Tapped Screw, B3 x 6
068F	1	1	1	51280312B0	B.H. Tapped Screw, B3 x 12
070F	1	1	1	2964160020	Bracket
072F	2	2	2	51280306B0	B.H. Tapped Screw, B3 x 6
073B	4	4	4	51280308U0	B.H. Tapped Screw, B3 x 8
074B	2	2	2	51100306S9	B.H.M. Screw, B3 x 6
074F	1	1	1	2964126010	Stay
075F	2	2	2	51280408B0	B.H. Tapped Screw, B4 x 8
076B	2	2	2	51280408U0	B.H. Tapped Screw, B4 x 8
076F	2	2	2	51280306B0	B.H. Tapped Screw, B3 x 6
077B	2	2	2	51280308U0	B.H. Tapped Screw, B3 x 8
077F	1	1	1	2964105020	Chassis
078F	1	1	1	2964105030	Chassis
079B	2	2	2	51760306B0	OS Tapped Screw, O3 x 6
080F	1	1	1	2964160010	Bracket
081F	1	1	1	1382005030	Clamper
082F	1	1	1	51280306B0	B.H. Tapped Screw, B3 x 6
083B	4	4	4	51280306U0	B.H. Tapped Screw, B3 x 6
083F	1	1	1	51280306B0	B.H. Tapped Screw, B3 x 6
084B	4	4	4	51280306B0	B.H. Tapped Screw, B3 x 6
084F	2	2	2	51280306B0	B.H. Tapped Screw, B3 x 6
085B	4	4	4	51280306B0	B.H. Tapped Screw, B3 x 6
085F	2	2	2	51280306B0	B.H. Tapped Screw, B3 x 6
086F	1	1	1	51280306B0	B.H. Tapped Screw, B3 x 6
087F	1	1	1	1382005030	Clamper
088F	1	1	1	62030049W0	Lug
089F	1	1	1	2886005030	Clamper
091F	1	1	1	2976267010	Heatsink
093F	1	1	1	2964160070	Bracket
094F	2	2	2	51280306B0	B.H. Tapped Screw, B3 x 6
095F	1	1	1	51280306B0	B.H. Tapped Screw, B3 x 6
096F	1	1	1	51280306B0	B.H. Tapped Screw, B3 x 6
097F	2	2	2	51280306U0	B.H. Tapped Screw, B3 x 6
099F	1	1	1	2964160080	Bracket
100F	2	2	2	51280306B0	B.H. Tapped Screw, B3 x 6
101F	2	2	2	51280306U0	B.H. Tapped Screw, B3 x 6
102F	1	1	1	1382005030	Clamper
103F	1	1	1	2964160040	Bracket
104F	2	2	2	51280306B0	B.H. Tapped Screw, B3 x 6

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
105F	2	2	2	51280306U0	B.H. Tapped Screw, B3 x 6
107F	16	16	16	51100316B9	B.H.M. Screw, B3 x 16
108F	16	16	16	54040302N0	Spring Washer
111F	2	2	2	2964118010	Spacer
121F	4	4	4	2212267020	Heatsink
122F	4	4	4	51100305S9	B.H.M. Screw, B3 x 5
123F	4	4	4	51280305U0	B.H. Tapped Screw, B3 x 5
124F	4	4	4	51280308U0	B.H. Tapped Screw, B3 x 8
130F	2	2	2	2963267020	Heatsink
131F	2	2	2	51280308B0	B.H. Tapped Screw, B3 x 8
134F	1	1	1	2964109020	Shield
135F	1	1	1	2964123010	Contacto
136F	1	1	1	51290308B0	Tapped Screw, 3 x 8
139F	1	1	1	51600306B0	Washer Screw, 3 x 6
142F	1	1	1	2964109030	Shield
143F	1	1	1	2964109040	Shield
144F	1	1	1	51280306U0	B.H. Tapped Screw, B3 x 6
148F	1	1	1	2218259020	Bushing
901B	1	1	1	2970154010	Knob
901S	1	1	1	2577813010	Envelope
901S	1	1	1	2818813010	Envelope
901S	1	1	1	2918813010	Envelope
902B	3	3	3	2970154020	Knob
902S	1	1	1	2577851020	Instructions
902S	1	1	1	2818851120	Instructions
903B	1	1	1	2963154040	Knob
903S	1	1	1	2577854010	Guarantee Card
903S	1	1	1	9630000180	Guarantee Card
904B	9	9	9	2963154030	Knob
904F	1	1	1	9510221010	Label
904S	1	1	1	2818854020	Guarantee Card
904S	1	1	1	9650000052	S. Station Card
905B	1	1	1	2963154010	Knob
905F	1	1	1	9512601100	Label
905S	1	1	1	2818851040	Instructions
905S	1	1	1	2818854040	Guarantee Card
906B	4	4	4	2970154050	Knob
906S	1	1	1	2818851140	Instructions
907B	2	2	2	51690306Q9	Socket Screw, HP
908B	1	1	1	2976160210	Bracket
908B	1	1	1	2976160222	Bracket
909B	10	10	10	51280308U0	B.H. Tapped Screw, B3 x 8
909S	1	1	1	2976851010	Instructions
909S	1	1	1	2976851310	Instructions
910S	1	1	1	2976851020	Instructions
910S	1	1	1	2976851030	Instructions
910S	1	1	1	2976851050	Instructions
911B	1	1	1	1455259040	Bushing
911B	1	1	1	1455259070	Bushing
911S	1	1	1	2886851100	Instructions
913B	1	1	1	62040029W0	Lug
914S	4	4	4	9522815010	Serial No. Card
914S	4	4	4	9523015110	Serial No. Card
914S	4	4	4	9523015120	Serial No. Card
915B	1	1	1	2976265010	Indicator
915B	1	1	1	2976265020	Indicator
915B	1	1	1	2976265030	Indicator
915S	2	2	2	9510901020	Label

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
918B	1		1	2578861010	Label
918B		1		2911861110	Label
919B		1		2911861143	Label
919B	1			2932861012	Label
920B		1		9510911010	Label
920B	1			9510911020	Label
920F			1	3953120030	Insulator
921B			1	2932861012	Label
921B	1			9511101010	Label
921F			1	2970005010	Clamper
922B		1		2911861240	Label
922F			2	51100314S9	B.H.M. Screw, B3 x 14
922S			1	9560000042	Hang Tag
923B		1		2911861190	Label
923B		2		51100308S9	B.H.M. Screw, B3 x 8
924S			1	2731821010	Silicagel
925F			2	51280306U0	B.H. Tapped Screw, B3 x 6
930B			2	2970120030	Insulator
930F			2	2970120030	Insulator
931B			1	2219120010	Insulator
931F			1	2219120010	Insulator
935F			1	2882861020	Label
CE01	1	1	1	EE22505040	Electrolytic Cap., 2.2μF ±20% 50V
CE02	1	1	1	EE22505040	Electrolytic Cap., 2.2μF ±20% 50V
CE05	1	1	1	EE47601040	Electrolytic Cap., 47μF 10V
CE06	1	1	1	EE47601040	Electrolytic Cap., 47μF 10V
CE07	1	1	1	DD11050010	Ceramic Cap., 5pF 50V
CE08	1	1	1	DD11050010	Ceramic Cap., 5pF 50V
CE09	1	1	1	DD11050010	Ceramic Cap., 5pF 50V
CE10	1	1	1	DD11050010	Ceramic Cap., 5pF 50V
CE11	1	1	1	EA10701090	Electrolytic Cap., 100μF 10V
CE12	1	1	1	EA10701090	Electrolytic Cap., 100μF 10V
CE13	1	1	1	EE33505040	Electrolytic Cap., 3.3μF ±20% 50V
CE14	1	1	1	EE33505040	Electrolytic Cap., 3.3μF ±20% 50V
CE15	1	1	1	DF16474510	Film Cap., 0.47μF ±10% 100V
CE16	1	1	1	DF16474510	Film Cap., 0.47μF ±10% 100V
CE17	1	1	1	DD15200010	Ceramic Cap., 20pF ±5% 50V
CE18	1	1	1	DD15200010	Ceramic Cap., 20pF ±5% 50V
CE19	1	1	1	DD11050010	Ceramic Cap., 5pF 50V
CE20	1	1	1	DD11050010	Ceramic Cap., 5pF 50V
CE21	1	1	1	EE33505040	Electrolytic Cap., 3.3μF ±20% 50V
CE22	1	1	1	EE33505040	Electrolytic Cap., 3.3μF ±20% 50V
CE23	1	1	1	EA10703590	Electrolytic Cap., 100μF 35V
CE24	1	1	1	EA10703590	Electrolytic Cap., 100μF 35V
QE01	1	1	1	HT108412A0	Transistor, 2SA841 (GR or BL)
QE02	1	1	1	HT108412A0	Transistor, 2SA841 (GR or BL)
QE03	1	1	1	HT108412A0	Transistor, 2SA841 (GR or BL)
QE04	1	1	1	HT108412A0	Transistor, 2SA841 (GR or BL)
QE05	1	1	1	HT316812A0	Transistor, 2SC1681 (GR or BL)
QE06	1	1	1	HT316812A0	Transistor, 2SC1681 (GR or BL)
QE07	1	1	1	HT108412A0	Transistor, 2SA841 (GR or BL)
QE08	1	1	1	HT108412A0	Transistor, 2SA841 (GR or BL)
QE09	1	1	1	HT108412A0	Transistor, 2SA841 (GR or BL)
QE10	1	1	1	HT108412A0	Transistor, 2SA841 (GR or BL)
QE11	1	1	1	HT316812A0	Transistor, 2SC1681 (GR or BL)
QE12	1	1	1	HT316812A0	Transistor, 2SC1681 (GR or BL)

- (U) for U.S.A
- (C) for Canada
- (E) for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
RE01	1	1	1	RT05105140	Resistor, 1M $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE02	1	1	1	RT05105140	Resistor, 1M $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE03	1	1	1	RT05102140	Resistor, 1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE04	1	1	1	RT05102140	Resistor, 1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE05	1	1	1	RT05223140	Resistor, 22k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE06	1	1	1	RT05223140	Resistor, 22k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE07	1	1	1	RT05823140	Resistor, 82k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE08	1	1	1	RT05823140	Resistor, 82k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE09	1	1	1	RT05153140	Resistor, 15k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE10	1	1	1	RT05153140	Resistor, 15k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE11	1	1	1	RT05124140	Resistor, 120k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE12	1	1	1	RT05124140	Resistor, 120k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE13	1	1	1	RT05392140	Resistor, 3.9k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE14	1	1	1	RT05392140	Resistor, 3.9k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE15	1	1	1	RT05471140	Resistor, 470 $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE16	1	1	1	RT05471140	Resistor, 470 $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE17	1	1	1	RT05474140	Resistor, 470k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE18	1	1	1	RT05474140	Resistor, 470k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE19	1	1	1	RT05102140	Resistor, 1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE20	1	1	1	RT05102140	Resistor, 1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE21	1	1	1	RT05105140	Resistor, 1M $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE22	1	1	1	RT05105140	Resistor, 1M $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE23	1	1	1	RT05154140	Resistor, 150k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE24	1	1	1	RT05154140	Resistor, 150k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE25	1	1	1	RT05123140	Resistor, 12k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE26	1	1	1	RT05123140	Resistor, 12k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE27	1	1	1	RT05472140	Resistor, 4.7k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE28	1	1	1	RT05472140	Resistor, 4.7k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE29	1	1	1	RT05330140	Resistor, 33 $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE30	1	1	1	RT05330140	Resistor, 33 $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE31	1	1	1	RT05474140	Resistor, 470k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE32	1	1	1	RT05474140	Resistor, 470k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RE33	1	1	1	GJ05821010	Resistor, 820 $\Omega$ $\pm$ 5% 1W
RE34	1	1	1	GJ05821010	Resistor, 820 $\Omega$ $\pm$ 5% 1W
CH01	1	1	1	DF15104010	Film Cap., 0.1 $\mu$ F $\pm$ 5% 50V
CH02	1	1	1	DF15104010	Film Cap., 0.1 $\mu$ F $\pm$ 5% 50V
CH03	1	1	1	DF15104010	Film Cap., 0.1 $\mu$ F $\pm$ 5% 50V
CH04	1	1	1	DF15104010	Film Cap., 0.1 $\mu$ F $\pm$ 5% 50V
CH05	1	1	1	DF15104010	Film Cap., 0.1 $\mu$ F $\pm$ 5% 50V
CH06	1	1	1	DF15104010	Film Cap., 0.1 $\mu$ F $\pm$ 5% 50V
CH07	1	1	1	DF15152010	Film Cap., 1500pF $\pm$ 5% 50V
CH08	1	1	1	DF15152010	Film Cap., 1500pF $\pm$ 5% 50V
CH09	1	1	1	DF15222010	Film Cap., 2200pF $\pm$ 5% 50V
CH10	1	1	1	DF15222010	Film Cap., 2200pF $\pm$ 5% 50V
CH11	1	1	1	DF65391010	Film Cap., 390pF $\pm$ 5% 50V
CH12	1	1	1	DF65391010	Film Cap., 390pF $\pm$ 5% 50V
CH13	1	1	1	DF17224010	Film Cap., 0.22 $\mu$ F $\pm$ 20% 50V
CH14	1	1	1	DF17224010	Film Cap., 0.22 $\mu$ F $\pm$ 20% 50V
CH15	1	1	1	DD11050010	Ceramic Cap., 5pF $\pm$ 0.5pF 50V
CH16	1	1	1	DD11050010	Ceramic Cap., 5pF $\pm$ 0.5pF 50V
CH17	1	1	1	EE10605040	Electrolytic Cap., 10 $\mu$ F 50V
CH18	1	1	1	EE10605040	Electrolytic Cap., 10 $\mu$ F 50V
CH19	1	1	1	DD15101020	Ceramic Cap., 100pF $\pm$ 5% 50V
CH20	1	1	1	DD15101020	Ceramic Cap., 100pF $\pm$ 5% 50V
CH21	1	1	1	EA47603590	Electrolytic Cap., 47 $\mu$ F 35V
CH22	1	1	1	EA47603590	Electrolytic Cap., 47 $\mu$ F 35V
JH01	1	1	1	YP06000400	Plug, 10P, AMP

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
JH02	1	1	1	YP06001050	Plug, 5P
PH00 FILTER AMP BOARD					
				YK29640310	P.W. Board
				ZZ29640310	P.W. Board Assembly
QH01	1	1	1	HT108412A0	Transistor, 2SA841 (GR or BL)
QH02	1	1	1	HT108412A0	Transistor, 2SA841 (GR or BL)
QH03	1	1	1	HT316812A0	Transistor, 2SC1681 (GR or BL)
QH04	1	1	1	HT316812A0	Transistor, 2SC1681 (GR or BL)
QH05	1	1	1	HT316812A0	Transistor, 2SC1681 (GR or BL)
QH06	1	1	1	HT316812A0	Transistor, 2SC1681 (GR or BL)
RH01	1	1	1	RT05334140	Resistor, 330k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH02	1	1	1	RT05334140	Resistor, 330k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH03	1	1	1	RT05244140	Resistor, 240k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH04	1	1	1	RT05244140	Resistor, 240k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH05	1	1	1	RT05513140	Resistor, 51k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH06	1	1	1	RT05513140	Resistor, 51k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH07	1	1	1	RT05113140	Resistor, 11k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH08	1	1	1	RT05113140	Resistor, 11k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH09	1	1	1	RT05113140	Resistor, 11k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH10	1	1	1	RT05113140	Resistor, 11k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH11	1	1	1	RT05113140	Resistor, 11k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH12	1	1	1	RT05113140	Resistor, 11k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH13	1	1	1	RT05115140	Resistor, 1.1M $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH14	1	1	1	RT05115140	Resistor, 1.1M $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH15	1	1	1	RT05102140	Resistor, 1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH16	1	1	1	RT05102140	Resistor, 1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH17	1	1	1	RT05103140	Resistor, 10k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH18	1	1	1	RT05103140	Resistor, 10k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH19	1	1	1	RT05682140	Resistor, 6.8k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH20	1	1	1	RT05682140	Resistor, 6.8k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH21	1	1	1	RT05102140	Resistor, 1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH22	1	1	1	RT05102140	Resistor, 1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH23	1	1	1	RT05224140	Resistor, 220k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH24	1	1	1	RT05224140	Resistor, 220k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH25	1	1	1	RT05221140	Resistor, 220 $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH26	1	1	1	RT05221140	Resistor, 220 $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH27	1	1	1	GF05182120	Resistor, 1.8k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH28	1	1	1	GF05182120	Resistor, 1.8k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH29	1	1	1	RT05103140	Resistor, 10k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH30	1	1	1	RT05103140	Resistor, 10k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH31	1	1	1	RT05124140	Resistor, 120k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RH32	1	1	1	RT05124140	Resistor, 120k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
JJ01	1	1	1	YP06000400	Plug, 10P, AMP
JJ02	1	1	1	YP06000400	Plug, 10P, AMP
JJ03	1	1	1	YP06001050	Plug, 5P
JJ04	1	1	1	YP06000340	Plug, 4P, AMP
JJ05	1	1	1	YP06000400	Plug, 10P, AMP
JJ06	1	1	1	YP06001040	Plug, 3P
JJ07	1	1	1	YP06001040	Plug, 3P
PJ01 PRE-AMP BOARD					
				YG29640012	P.W. Board
				ZZ29640010	P.W. Board Assembly
SJ01	1	1	1	SR08050360	Rotary Switch, Selector
SJ02	1	1	1	SR04030160	Rotary Switch, Tape Copy



• (U) for U.S.A  
• (C) for Canada  
• (E) for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
SJ03	1	1	1	SR04030160	Rotary Switch, Tape Monitor
CN01	1	1	1	DK18103510	Ceramic Cap., 0.01 $\mu$ F 500V
CN02	1	1	1	DK18103510	Ceramic Cap., 0.01 $\mu$ F 500V
CN03	1	1	1	EA10605090	Electrolytic Cap., 10 $\mu$ F 50V
CN04	1	1	1	EA47601690	Electrolytic Cap., 47 $\mu$ F 16V
CN05	1	1	1	EA22701690	Electrolytic Cap., 220 $\mu$ F 16V
CN06	1	1	1	EA47601690	Electrolytic Cap., 47 $\mu$ F 16V
CN07	1	1	1	EA33505090	Electrolytic Cap., 3.3 $\mu$ F 50V
CN08	1	1	1	EA33505090	Electrolytic Cap., 3.3 $\mu$ F 50V
JN01	20	20	20	YP10001130	Plug
JN20					
LN01	1	1	1	LY40240050	Relay
					<b>PN00 RELAY BOARD</b>
PN00	1	1	1	YK29760210	P.W. Board
	1	1	1	ZZ29760210	P.W. Board assembly
QN01	1	1	1	HD20011030	Diode, DS131B
QN02	1	1	1	HD20005010	Diode, W06B
QN03	1	1	1	HT309452A0	Transistor, 2SC945 Q, R
QN04	1	1	1	HT313182R0	Transistor, 2SC1318 R, S
QN05	1	1	1	HT313182R0	Transistor, 2SC1318 R, S
QN06	1	1	1	HD30023090	Zener Diode, WZ071 7V
QN07	1	1	1	HT317752D0	Transistor, 2SC1775A D, E
QN08	1	1	1	HT317752D0	Transistor, 2SC1775A D, E
QN09	1	1	1	HT108722D0	Transistor, 2SA872A D, E
QN10	1	1	1	HT108722D0	Transistor, 2SA872A D, E
QN11	1	1	1	HT108722D0	Transistor, 2SA872A D, E
QN12	1	1	1	HT108722D0	Transistor, 2SA872A D, E
QN13	1	1	1	HT309452A0	Transistor, 2SC945 Q, R
QN14	1	1	1	HT309452A0	Transistor, 2SC945 Q, R
QN15	1	1	1	HT309452A0	Transistor, 2SC945 Q, R
QN16	1	1	1	HT309452A0	Transistor, 2SC945 Q, R
QN17	1	1	1	HD20018050	Diode, 1S2092
QN18	1	1	1	HD20018050	Diode, 1S2092
QN19	1	1	1	HD20001210	Diode, 1S2473
QN20	1	1	1	HD20001210	Diode, 1S2473
QN21	1	1	1	HD20001210	Diode, 1S2473
QN22	1	1	1	HD20001210	Diode, 1S2473
RN01	1	1	1	GJ05121010	Resistor, 120 $\Omega$ $\pm$ 5% 1W
RN02	1	1	1	GJ05102020	Resistor, 1k $\Omega$ $\pm$ 5% 2W
RN03	1	1	1	GD05682140	Resistor, 6.8k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN04	1	1	1	GD05273140	Resistor, 27k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN05	1	1	1	GD05223140	Resistor, 22k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN06	1	1	1	GD05164140	Resistor, 160k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN07	1	1	1	GJ05181010	Resistor, 180 $\Omega$ $\pm$ 5% 1W
RN08	1	1	1	GD05560140	Resistor, 56 $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN09	1	1	1	GU05562120	Resistor, 5.6k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN10	1	1	1	GU05562120	Resistor, 5.6k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN11	1	1	1	GD05474140	Resistor, 470k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN12	1	1	1	GJ05182010	Resistor, 1.8k $\Omega$ $\pm$ 5% 1W
RN13	1	1	1	GD05103140	Resistor, 10k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN14	1	1	1	GD05103140	Resistor, 10k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN15	1	1	1	GD05333140	Resistor, 33k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN16	1	1	1	GD05333140	Resistor, 33k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN17	1	1	1	GD05393140	Resistor, 39k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN18	1	1	1	GD05393140	Resistor, 39k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
RN19	1	1	1	GD05183140	Resistor, 18k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN20	1	1	1	GD05183140	Resistor, 18k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN21	1	1	1	GD05473140	Resistor, 47k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN22	1	1	1	GD05473140	Resistor, 47k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN23	1	1	1	GD05353140	Resistor, 35k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN24	1	1	1	GD05353140	Resistor, 35k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN25	1	1	1	GD05353140	Resistor, 35k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN26	1	1	1	GD05353140	Resistor, 35k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN27	1	1	1	GD05302140	Resistor, 3k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN28	1	1	1	GD05302140	Resistor, 3k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN29	1	1	1	GD05473140	Resistor, 47k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN30	1	1	1	GD05473140	Resistor, 47k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN31	1	1	1	GD05183140	Resistor, 18k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN32	1	1	1	GD05183140	Resistor, 18k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN33	1	1	1	GD05223140	Resistor, 22k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN34	1	1	1	GD05223140	Resistor, 22k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN35	1	1	1	GD05511140	Resistor, 510 $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN36	1	1	1	GD05511140	Resistor, 510 $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN37	1	1	1	GD05512140	Resistor, 5.1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN38	1	1	1	GD05512140	Resistor, 5.1k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN39	1	1	1	GD05273140	Resistor, 27k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN40	1	1	1	GD05273140	Resistor, 27k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN41	1	1	1	GD05104140	Resistor, 100k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN42	1	1	1	GD05104140	Resistor, 100k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN43	1	1	1	GD05822140	Resistor, 8.2k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
RN44	1	1	1	GD05822140	Resistor, 8.2k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W
FP01				FS10160800	Fuse, SEMKO 1.6A
FP02				FS10160800	Fuse, SEMKO 1.6A
JP01				YJ08000200	Jack, Fuse Holder, PWB Type
JP02				YJ08000200	Jack, Fuse Holder, PWB Type
JP03				YJ08000200	Jack, Fuse Holder, PWB Type
JP04				YJ08000200	Jack, Fuse Holder, PWB Type
CS01	1	1	1	DF15104010	Film Cap., 0.1 $\mu$ F $\pm$ 5% 50V
CS02	1	1	1	DF15104010	Film Cap., 0.1 $\mu$ F $\pm$ 5% 50V
CS03	1	1	1	DF15222010	Film Cap., 2200pF $\pm$ 5% 50V
CS04	1	1	1	DF15222010	Film Cap., 2200pF $\pm$ 5% 50V
CS05	1	1	1	DF15153010	Film Cap., 0.015 $\mu$ F $\pm$ 5% 50V
CS06	1	1	1	DF15153010	Film Cap., 0.015 $\mu$ F $\pm$ 5% 50V
CS07	1	1	1	DF15153010	Film Cap., 0.015 $\mu$ F $\pm$ 5% 50V
CS08	1	1	1	DF15153010	Film Cap., 0.015 $\mu$ F $\pm$ 5% 50V
CS09	1	1	1	DF15682010	Film Cap., 6800pF $\pm$ 5% 50V
CS10	1	1	1	DF15682010	Film Cap., 6800pF $\pm$ 5% 50V
CS11	1	1	1	DF65391010	Film Cap., 390pF $\pm$ 5% 50V
CS12	1	1	1	DF65391010	Film Cap., 390pF $\pm$ 5% 50V
CS13	1	1	1	DF15822010	Film Cap., 8200pF $\pm$ 5% 50V
CS14	1	1	1	DF15822010	Film Cap., 8200pF $\pm$ 5% 50V
CS15	1	1	1	DD15101020	Ceramic Cap., 100pF $\pm$ 5% 50V
CS16	1	1	1	DD15101020	Ceramic Cap., 100pF $\pm$ 5% 50V
CS17	1	1	1	DF15103010	Film Cap., 0.01 $\mu$ F $\pm$ 5% 50V
CS18	1	1	1	DF15103010	Film Cap., 0.01 $\mu$ F $\pm$ 5% 50V
CS19	1	1	1	DF15103010	Film Cap., 0.01 $\mu$ F $\pm$ 5% 50V
CS20	1	1	1	DF15103010	Film Cap., 0.01 $\mu$ F $\pm$ 5% 50V
CS21	1	1	1	DF15683010	Film Cap., 0.068 $\mu$ F $\pm$ 5% 50V
CS22	1	1	1	DF15683010	Film Cap., 0.068 $\mu$ F $\pm$ 5% 50V
CS23	1	1	1	DF15683010	Film Cap., 0.068 $\mu$ F $\pm$ 5% 50V
CS24	1	1	1	DF15683010	Film Cap., 0.068 $\mu$ F $\pm$ 5% 50V
CS25	1	1	1	DF15182010	Film Cap., 1800pF $\pm$ 5% 50V



- (U) for U.S.A
- (C) for Canada
- (E) for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
CS26	1	1	1	DF15182010	Film Cap., 1800pF ±5% 50V
JS01	1	1	1	YJ06000400	Jack, 10P Connector (AMP)
JS02	1	1	1	YJ06000400	Jack, 10P Connector (AMP)
JS03	1	1	1	YJ06000340	Jack, 4P Connector (AMP)
JS05	1	1	1	YJ06000340	Jack, 4P Connector (AMP)
JS18	14	14	14	YP10001130	Plug
<b>PS00 FRONT PANEL BOARD</b>					
PS00	1	1	1	YD29702020	P.W. Board, Front Panel
	1	1	1	ZZ29762020	P.W. Board Assembly
RS01	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
RS02	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
RS03	1	1	1	RT05332140	Resistor, 3.3kΩ ±5% ¼W
RS04	1	1	1	RT05332140	Resistor, 3.3kΩ ±5% ¼W
RS05	1	1	1	RT05183140	Resistor, 18kΩ ±5% ¼W
RS06	1	1	1	RT05183140	Resistor, 18kΩ ±5% ¼W
RS07	1	1	1	RS05030320	Variable Resistor, 50kΩx2
RS08	1	1	1	RG05030060	Variable Resistor, 50kΩAx2
RS09	1	1	1	RM05030720	Variable Resistor, 50kΩBx2
RS11	1	1	1	RT05183140	Resistor, 18kΩ ±5% ¼W
RS12	1	1	1	RT05183140	Resistor, 18kΩ ±5% ¼W
RS13	1	1	1	RT05183140	Resistor, 18kΩ ±5% ¼W
RS14	1	1	1	RT05183140	Resistor, 18kΩ ±5% ¼W
RS15	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
RS16	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
RS17	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
RS18	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
RS19	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
RS20	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
RS21	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
RS22	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W
RS23	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W
RS24	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W
RS25	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W
RS26	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W
RS27	1	1	1	RT05392140	Resistor, 3.9kΩ ±5% ¼W
RS28	1	1	1	RT05392140	Resistor, 3.9kΩ ±5% ¼W
RS29	1	1	1	RT05274140	Resistor, 270kΩ ±5% ¼W
RS30	1	1	1	RT05274140	Resistor, 270kΩ ±5% ¼W
RS31	1	1	1	RS01040040	Variable Resistor, 100kΩBx2
RS32	1	1	1	RS01040040	Variable Resistor, 100kΩBx2
RS33	1	1	1	RS01040040	Variable Resistor, 100kΩBx2
RS35	1	1	1	RT05100140	Resistor, 10Ω ±5% ¼W
RS36	1	1	1	RT05100140	Resistor, 10Ω ±5% ¼W
RS37	1	1	1	RT05684140	Resistor, 680kΩ ±5% ¼W
RS38	1	1	1	RT05684140	Resistor, 680kΩ ±5% ¼W
RS39	1	1	1	RT05684140	Resistor, 680kΩ ±5% ¼W
RS40	1	1	1	RT05684140	Resistor, 680kΩ ±5% ¼W
RS41	1	1	1	RT05105140	Resistor, 1MΩ ±5% ¼W
RS42	1	1	1	RT05105140	Resistor, 1MΩ ±5% ¼W
RS43	1	1	1	RT05182140	Resistor, 1.8kΩ ±5% ¼W
RS44	1	1	1	RT05182140	Resistor, 1.8kΩ ±5% ¼W
RS45	1	1	1	RT05153140	Resistor, 15kΩ ±5% ¼W
RS46	1	1	1	RT05153140	Resistor, 15kΩ ±5% ¼W
RS47	1	1	1	RT05100140	Resistor, 10Ω ±5% ¼W
RS48	1	1	1	RT05100140	Resistor, 10Ω ±5% ¼W
SS01	1	1	1	SR04050100	Rotary Switch, 4 Circuit 5 Position
SS02	1	1	1	SP04040170	Push Switch, 4 Circuit 4 Button
SS03	1	1	1	SP04010210	Push Switch, 4 Circuit 1 Button
SS04	1	1	1	SP04010210	Push Switch, 4 Circuit 1 Button
CT01	1	1	1	DF16103010	Film Cap., 0.01μF ±10% 50V
CT02	1	1	1	DF16103010	Film Cap., 0.01μF ±10% 50V
CT03	1	1	1	DF16103010	Film Cap., 0.01μF ±10% 50V
CT04	1	1	1	DF16103010	Film Cap., 0.01μF ±10% 50V
CT09	1	1	1	EA22601690	Electrolytic Cap., 22μF 16V
CT10	1	1	1	EA22601690	Electrolytic Cap., 22μF 16V
CT11	1	1	1	EA22601690	Electrolytic Cap., 22μF 16V
CT12	1	1	1	EA22601690	Electrolytic Cap., 22μF 16V
QT01	1	1	1	HT309452A0	Transistor, 2SC945 (Q or R)
QT02	1	1	1	HT309452A0	Transistor, 2SC945 (Q or R)
QT03	1	1	1	HT107332A0	Transistor, 2SA733 (Q or R)
QT04	1	1	1	HT107332A0	Transistor, 2SA733 (Q or R)
QT05	1	1	1	HD20011050	Diode, 1S1555
QT06	1	1	1	HD20011050	Diode, 1S1555
QT07	1	1	1	HD20011050	Diode, 1S1555
QT08	1	1	1	HD20011050	Diode, 1S1555
QT09	1	1	1	HD20011050	Diode, 1S1555
QT10	1	1	1	HD20011050	Diode, 1S1555
QT11	1	1	1	HD20011050	Diode, 1S1555
QT12	1	1	1	HD20011050	Diode, 1S1555
QT13	1	1	1	HD20003210	Diode, 1S2471
QT14	1	1	1	HD20003210	Diode, 1S2471
QT15	1	1	1	HD20003210	Diode, 1S2471
QT16	1	1	1	HD20003210	Diode, 1S2471
RT05	1	1	1	GD05272120	Resistor, 2.7kΩ ±5% ¼W
RT06	1	1	1	GD05272120	Resistor, 2.7kΩ ±5% ¼W
RT07	1	1	1	GD05272120	Resistor, 2.7kΩ ±5% ¼W
RT08	1	1	1	GD05272120	Resistor, 2.7kΩ ±5% ¼W
RT09	1	1	1	GD05432140	Resistor, 4.3kΩ ±5% ¼W
RT10	1	1	1	GD05432140	Resistor, 4.3kΩ ±5% ¼W
RT11	1	1	1	GD05201140	Resistor, 200Ω ±5% ¼W
RT12	1	1	1	GD05201140	Resistor, 200Ω ±5% ¼W
RT13	1	1	1	GD05201140	Resistor, 200Ω ±5% ¼W
RT14	1	1	1	GD05201140	Resistor, 200Ω ±5% ¼W
RT15	1	1	1	GD05201140	Resistor, 200Ω ±5% ¼W
RT16	1	1	1	GD05201140	Resistor, 200Ω ±5% ¼W
RT17	1	1	1	GD05201140	Resistor, 200Ω ±5% ¼W
RT18	1	1	1	GD05201140	Resistor, 200Ω ±5% ¼W
RT19	1	1	1	GD05820140	Resistor, 82Ω ±5% ¼W
RT20	1	1	1	GD05820140	Resistor, 82Ω ±5% ¼W
RT21	1	1	1	GD05820140	Resistor, 82Ω ±5% ¼W
RT22	1	1	1	GD05820140	Resistor, 82Ω ±5% ¼W
CV01	1	1	1	DK18203010	Ceramic Cap., 0.02μF 50V
CV02	1	1	1	DK18203010	Ceramic Cap., 0.02μF 50V
CV03	1	1	1	DK18203010	Ceramic Cap., 0.02μF 50V

- (U) for U.S.A
- (C) for Canada
- (E) for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION	REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E				U	C	E		
CV04	1	1	1	DF17104010	Film Cap., 0.11 $\mu$ F 50V	J006	1	1	1	YT03040160	Terminal
JV01	1	1	1	YT02040150	Terminal, 4P RCA	J007					
JV02	1	1	1	YT02040150	Terminal, 4P RCA		4	4		YJ04000560	Jack, AC Outlet
JV03				BY01050060	Jack, RCA (DIN)	J010					
JV03	1	1		YT02040150	Terminal, 4P RCA	J011					
JV04				BY01050060	Jack, RCA (DIN)		8	8	8	YJ05000220	Jack, Transistor Socket
JV04	1	1		YT02040150	Terminal, 4P RCA	J018					
JV05	1	1	1	YJ06000400	Jack, 10P AMP	J019	1	1	1	YJ05000250	Jack, LED Socket
JV06	1	1	1	YJ06000400	Jack, 10P AMP	J020	1	1	1	YJ06001040	Jack, 3P Jack
JV07						J021	1	1	1	YJ06001050	Jack
	9	9	9	YP10001130	Plug	J022	1	1	1	YJ06001040	Jack 3P
JV15						J023	1	1	1	YJ06001450	Jack, 6P
JV16	1	1	1	YT02040210	Terminal, 4P RCA	J024	1	1	1	YJ06001050	Jack, 5P
JV17	1	1	1	YP10001130	Plug	J025	1	1	1	YJ06001040	Jack, 3P
JV18	1	1	1	YP10001130	Plug	J026				YJ08000220	Jack, Fuse Holder 20mm
						J026	1	1		YJ08000230	Jack, Fuse Holder
						J027				BY03110010	Plug, Voltage Selector
						J028	1	1	1	YJ06001040	Jack
PV00	1	1	1	YF29640010	P.W. Board	J029				YL09030010	Terminal, Connector
	1	1		ZZ29641010	P.W. Board Assembly	J031	1	1	1	YJ05000250	Jack, LED Socket
				ZZ29648010	P.W. Board Assembly						
RV01				RT05394140	Resistor, 390k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W	J032	1	1	1	YJ05000250	Jack, LED Socket
RV02				RT05394140	Resistor, 390k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W	J033	1	1	1	YJ06001040	Jack, 3P
RV03				RT05394140	Resistor, 390k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W	J034	1	1	1	YJ06001040	Jack, 3P
RV04				RT05394140	Resistor, 390k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W	L001	1	1		TS61406050	Power Transformer
RV05				RT05104140	Resistor, 100k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W	L001				TS61406060	Power Transformer
RV06				RT05104140	Resistor, 100k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W	Q001	1	1	1	HT404272A0	Transistor, 2SD427 (R or O)
RV07				RT05104140	Resistor, 100k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W	Q002	1	1	1	HT205572A0	Transistor, 2SB557 (R or O)
RV08				RT05104140	Resistor, 100k $\Omega$ $\pm$ 5% $\frac{1}{4}$ W	Q003	1	1	1	HT404272A0	Transistor, 2SD427 (R or O)
JW01	1	1	1	YJ01000860	Jack, Headphone	Q004	1	1	1	HT205572A0	Transistor, 2SB557 (R or O)
JW02						Q005	1	1	1	HT404272A0	Transistor, 2SD427 (R or O)
	7	7	7	YP10001130	Plug	Q006	1	1	1	HT205572A0	Transistor, 2SB557 (R or O)
JW08						Q007	1	1	1	HT404272A0	Transistor, 2SD427 (R or O)
						Q008	1	1	1	HT205572A0	Transistor, 2SB557 (R or O)
						Q009	1	1	1	HD20004290	Diode, 5SVB-20
PW00	1	1	1	YF29640020	P.W. Board	Q010	1	1	1	HI10004030	L.E.D., 132B
	1	1	1	ZZ29641020	P.W. Board Assembly	Q011	1	1	1	HI10004030	L.E.D., SLP-132B
						Q012	1	1	1	HI10004030	L.E.D., SLP-132B
RW01	1	1	1	GJ05331010	Resistor, 330 $\Omega$ $\pm$ 5% 1W	R001	1	1	1	GS10222030	Resistor, 2.2k $\Omega$ $\pm$ 10% 3W
RW02	1	1	1	GJ05331010	Resistor, 330 $\Omega$ $\pm$ 5% 1W	R002	1	1	1	GS10222030	Resistor, 2.2k $\Omega$ $\pm$ 10% 3W
RW03	1	1	1	GJ05151010	Resistor, 150 $\Omega$ $\pm$ 5% 1W	S001				SP02010250	Pushswitch, SDG-5P SEMKO
RW04	1	1	1	GJ05151010	Resistor, 150 $\Omega$ $\pm$ 5% 1W						
SW01	1	1	1	SP04020210	Pushswitch	S001	1	1		SP02020210	Pushswitch, Power TV-5
C001				DQ07473540	Oil-Paper Cap., 0.047 $\mu$ F $\pm$ 20% 450V	S002	1	1	1	SS02020380	Slide Switch, AC-DC Coupling
C002				DQ07473540	Oil-Paper Cap., 0.047 $\mu$ F $\pm$ 20% 450V	W001				YC01900030	A.C. Power Cord
C003	1	1	1	EI12906310	Electrolytic Cap., 12000 $\mu$ Fx2 63V	W001	1	1		YC02400170	A.C. Power Cord
C004	1	1	1	DF17104520	Film Cap., 0.1 $\mu$ F $\pm$ 20% 200V	C401	1	1	1	EE47505040	Electrolytic Cap., 4.7 $\mu$ F $\pm$ 20% 50V
C005	1	1	1	DF17104520	Film Cap., 0.1 $\mu$ F $\pm$ 20% 200V	C402	1	1	1	EE47505040	Electrolytic Cap., 4.7 $\mu$ F $\pm$ 20% 50V
C006	1	1	1	EQ10601610	Electrolytic Cap., 10 $\mu$ F 16V	C405	1	1	1	DD15600010	Ceramic Cap., 60pF $\pm$ 5% 50V
C007	1	1	1	EQ10601610	Electrolytic Cap., 10 $\mu$ F 16V	C406	1	1	1	DD15600010	Ceramic Cap., 60pF $\pm$ 5% 50V
F001				FS10300900	Fuse, SGA 3A	C409	1	1	1	DD15101020	Ceramic Cap., 100pF $\pm$ 5% 50V
F001	1	1		FS10600040	Fuse, UL MGC 6A	C410	1	1	1	DD15101020	Ceramic Cap., 100pF $\pm$ 5% 50V
G001	1			BF10400040	Cap Comp.	C411	1	1	1	DD15101020	Ceramic Cap., 100pF $\pm$ 5% 50V
G001				BF33300020	Cap Comp., 0.033 $\mu$ F+120 $\Omega$ ECQ-JC	C412	1	1	1	DD15101020	Ceramic Cap., 100pF $\pm$ 5% 50V
J001	1	1	1	YJ01001010	Jack, MIC	C413	1	1	1	EE10701640	Electrolytic Cap., 100 $\mu$ F $\pm$ 20% 16V
J002	1	1	1	YJ01001010	Jack, MIC	C414	1	1	1	EE10701640	Electrolytic Cap., 100 $\mu$ F $\pm$ 20% 16V
J004	1	1	1	YT01010050	Terminal, Ground	C415	1	1	1	DF65101010	Film Cap., 100pF $\pm$ 5% 50V
J005	1	1	1	YT03040160	Terminal						

- (U) for U.S.A
- (C) for Canada
- (E) for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
C416	1	1	1	DF65101010	Film Cap., 100pF ±5% 50V
C417	1	1	1	DD11050010	Ceramic Cap., 5pF 50V
C418	1	1	1	DD11050010	Ceramic Cap., 5pF 50V
C419	1	1	1	EE47505040	Electrolytic Cap., 4.7μF ±20% 50V
C420	1	1	1	EE47505040	Electrolytic Cap., 4.7μF ±20% 50V
C423	1	1	1	DF65681010	Film Cap., 680pF ±5% 50V
C424	1	1	1	DF65681010	Film Cap., 680pF ±5% 50V
C425	1	1	1	DF14112010	Film Cap., 1100pF ±2% 50V
C426	1	1	1	DF14112010	Film Cap., 1100pF ±2% 50V
C427	1	1	1	DF14362010	Film Cap., 3600pF ±2% 50V
C428	1	1	1	DF14362010	Film Cap., 3600pF ±2% 50V
C429	1	1	1	EE10505040	Electrolytic Cap., 1μF ±20% 50V
C430	1	1	1	EE10505040	Electrolytic Cap., 1μF ±20% 50V
C431	1	1	1	DD15300010	Ceramic Cap., 30pF ±5% 50V
C432	1	1	1	DD15300010	Ceramic Cap., 30pF ±5% 50V
C433	1	1	1	EA10603590	Electrolytic Cap., 10μF 35V
C434	1	1	1	EA10603590	Electrolytic Cap., 10μF 35V
C435	1	1	1	EA47605090	Electrolytic Cap., 47μF 50V
C436	1	1	1	EA47605090	Electrolytic Cap., 47μF 50V
C437	1	1	1	DD15251010	Ceramic Cap., 250pF ±5% 50V
C438	1	1	1	DD15251010	Ceramic Cap., 250pF ±5% 50V
Q401	1	1	1	HT108722D0	Transistor, 2SA872A (D or E)
Q402	1	1	1	HT108722D0	Transistor, 2SA872A (D or E)
Q403	1	1	1	HT108722D0	Transistor, 2SA872A (D or E)
Q404	1	1	1	HT108722D0	Transistor, 2SA872A (D or E)
Q405	1	1	1	HT317752E0	Transistor, 2SC1775A (E or F)
Q406	1	1	1	HT317752E0	Transistor, 2SC1775A (E or F)
Q407	1	1	1	HT318852C0	Transistor, 2SC1885 (R or S)
Q408	1	1	1	HT109122C0	Transistor, 2SA912 (R or S)
Q409	1	1	1	HT318852C0	Transistor, 2SC1885 (R or S)
Q410	1	1	1	HT109122C0	Transistor, 2SA912 (R or S)
R401	1	1	1	RT05513140	Resistor, 51kΩ ±5% ¼W
R402	1	1	1	RT05513140	Resistor, 51kΩ ±5% ¼W
R403	1	1	1	RT05104140	Resistor, 1MΩ ±5% ¼W
R404	1	1	1	RT05105140	Resistor, 1MΩ ±5% ¼W
R405	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R406	1	1	1	RT05102140	Resistor, 1kΩ ±5% ¼W
R407	1	1	1	RT05223140	Resistor, 22kΩ ±5% ¼W
R408	1	1	1	RT05223140	Resistor, 22kΩ ±5% ¼W
R409	1	1	1	RT05394140	Resistor, 390kΩ ±5% ¼W
R410	1	1	1	RT05394140	Resistor, 390kΩ ±5% ¼W
R411	1	1	1	RT02821140	Resistor, 820Ω ±2% ¼W
R412	1	1	1	RT02821140	Resistor, 820Ω ±2% ¼W
R413	1	1	1	RT02914140	Resistor, 910kΩ ±2% ¼W
R414	1	1	1	RT02914140	Resistor, 910kΩ ±2% ¼W
R415	1	1	1	RT02513140	Resistor, 51kΩ ±2% ¼W
R416	1	1	1	RT02513140	Resistor, 51kΩ ±2% ¼W
R417	1	1	1	RT05332140	Resistor, 3.3kΩ ±5% ¼W
R418	1	1	1	RT05332140	Resistor, 3.3kΩ ±5% ¼W
R419	1	1	1	RT05132140	Resistor, 1.3kΩ ±5% ¼W
R420	1	1	1	RT05132140	Resistor, 1.3kΩ ±5% ¼W
R421	1	1	1	RT05154140	Resistor, 150kΩ ±5% ¼W
R422	1	1	1	RT05154140	Resistor, 150kΩ ±5% ¼W
R423	1	1	1	RT05220140	Resistor, 22Ω ±5% ¼W
R424	1	1	1	RT05220140	Resistor, 22Ω ±5% ¼W
R425	1	1	1	RT05220140	Resistor, 22Ω ±5% ¼W
R426	1	1	1	RT05220140	Resistor, 22Ω ±5% ¼W
R427	1	1	1	RT05681140	Resistor, 680Ω ±5% ¼W
R428	1	1	1	RT05681140	Resistor, 680Ω ±5% ¼W
R429	1	1	1	RT05181140	Resistor, 180Ω ±5% ¼W
R430	1	1	1	RT05181140	Resistor, 180Ω ±5% ¼W
R431	1	1	1	RT05474140	Resistor, 470kΩ ±5% ¼W
R432	1	1	1	RT05474140	Resistor, 470kΩ ±5% ¼W
R433	1	1	1	RT05683140	Resistor, 68kΩ ±5% ¼W
R434	1	1	1	RT05683140	Resistor, 68kΩ ±5% ¼W
R435	1	1	1	RT05823140	Resistor, 82kΩ ±5% ¼W
R436	1	1	1	RT05823140	Resistor, 82kΩ ±5% ¼W
R437	1	1	1	RT05753140	Resistor, 75kΩ ±5% ¼W
R438	1	1	1	RT05753140	Resistor, 75kΩ ±5% ¼W
R439	1	1	1	GF05560120	Resistor, 56Ω ±5% ¼W
R440	1	1	1	GF05560120	Resistor, 56Ω ±5% ¼W
C701	1	1	1	DF65251010	Film Cap., 250pF ±5% 50V
C702	1	1	1	DF65251010	Film Cap., 250pF ±5% 50V
C703	1	1	1	DF65162010	Film Cap., 1600pF ±5% 50V
C704	1	1	1	DF65162010	Film Cap., 1600pF ±5% 50V
C705	1	1	1	DF16473010	Film Cap., 0.047μF ±10% 50V
C706	1	1	1	DF16473010	Film Cap., 0.047μF ±10% 50V
C707	1	1	1	EA22603590	Electrolytic Cap., 22μF 35V
C708	1	1	1	EA22603590	Electrolytic Cap., 22μF 35V
C709	1	1	1	DD15500500	Ceramic Cap., 50pF ±5% 500V
C710	1	1	1	DD15500500	Ceramic Cap., 50pF ±5% 500V
C711	1	1	1	DF17104540	Film Cap., 0.1μF 100V
C712	1	1	1	DF17104540	Film Cap., 0.1μF 100V
C713	1	1	1	DF17104540	Film Cap., 0.1μF 100V
C714	1	1	1	DF17104540	Film Cap., 0.1μF 100V
C715	1	1	1	EA22603590	Electrolytic Cap., 22μF 100V
C716	1	1	1	EA22603590	Electrolytic Cap., 22μF 100V
C717	1	1	1	DF65301510	Film Cap., 300pF ±5%
C718	1	1	1	DF65301510	Film Cap., 300pF ±5%
C719	1	1	1	DF65271510	Film Cap., 270pF ±5%
C720	1	1	1	DF65271510	Film Cap., 270pF ±5%
C721	1	1	1	DF16473010	Film Cap., 0.047μF ±10% 50V
C722	1	1	1	DF16473010	Film Cap., 0.047μF ±10% 50V
C723	1	1	1	EA22605090	Electrolytic Cap., 22μF 50V
C724	1	1	1	EA22605090	Electrolytic Cap., 22μF 50V
C725	1	1	1	DF17104540	Film Cap., 0.1μF 100V
C726	1	1	1	DF17104540	Film Cap., 0.1μF 100V
C727	1	1	1	DF17104540	Film Cap., 0.1μF 100V
C728	1	1	1	DF17104540	Film Cap., 0.1μF 100V
C729	1	1	1	DF17104540	Film Cap., 0.1μF 100V
C730	1	1	1	DF17104540	Film Cap., 0.1μF 100V
C731	1	1	1	EA47606390	Electrolytic Cap., 47μF 63V
C732	1	1	1	EA47606390	Electrolytic Cap., 47μF 63V
C733	1	1	1	EA47606390	Electrolytic Cap., 47μF 63V
C734	1	1	1	EA47606390	Electrolytic Cap., 47μF 63V
J701	1	1	1	Y06001040	Plug, 3P
J704	4	4	4	Y06001040	Plug, 3P
J705	1	1	1	Y06000540	Plug, 6P (SMK)
L701	1	1	1	LC22620010	Choke Coil
L702	1	1	1	LC22620010	Choke Coil
P700	1	1	1	YG29640020	P700, MAIN AMP BOARD
	1	1	1	ZZ29761020	P.W. Board Assembly

- (U) for U.S.A
- (C) for Canada
- (E) for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION		
	U	C	E				
Q701	1	1	1	HC10003200	IC, 2SK109	(C or D)	
Q702	1	1	1	HC10003200	IC, 2SK109	(C or D)	
Q703	1	1	1	HT317752D0	Transistor, 2SC1775A	(D or E)	
Q704	1	1	1	HT317752D0	Transistor, 2SC1775A	(D or E)	
Q705	1	1	1	HT317752D0	Transistor, 2SC1775A	(D or E)	
Q706	1	1	1	HT317752D0	Transistor, 2SC1775A	(D or E)	
Q707	1	1	1	HT317752D0	Transistor, 2SC1775A	(D or E)	
Q708	1	1	1	HT317752D0	Transistor, 2SC1775A	(D or E)	
Q709	1	1	1	HT108722D0	Transistor, 2SA872A	(D or E)	
Q710	1	1	1	HT108722D0	Transistor, 2SA872A	(D or E)	
Q711	1	1	1	HT108722D0	Transistor, 2SA872A	(D or E)	
Q712	1	1	1	HT108722D0	Transistor, 2SA872A	(D or E)	
Q713	1	1	1	HT108722D0	Transistor, 2SA872A	(D or E)	
Q714	1	1	1	HT108722D0	Transistor, 2SA872A	(D or E)	
Q715	1	1	1	HT317752D0	Transistor, 2SC1775A	(D or E)	
Q716	1	1	1	HT317752D0	Transistor, 2SC1775A	(D or E)	
Q717	1	1	1	HT108722E0	Transistor, 2SA872A	(E or F)	
Q718	1	1	1	HT108722E0	Transistor, 2SA872A	(E or F)	
Q719	1	1	1	HT108722E0	Transistor, 2SA872A	(E or F)	
Q720	1	1	1	HT108722E0	Transistor, 2SA872A	(E or F)	
Q721	1	1	1	HT109142B0	Transistor, 2SA914	(R or S)	
Q722	1	1	1	HT109142B0	Transistor, 2SA914	(R or S)	
Q723	1	1	1	HT319532B0	Transistor, 2SC1953	(R or S)	
Q724	1	1	1	HT319532B0	Transistor, 2SC1953	(R or S)	
Q725	1	1	1	HT319132B0	Transistor, 2SC1913	(R or S)	
Q726	1	1	1	HT319132B0	Transistor, 2SC1913	(R or S)	
Q727	1	1	1	HT109132B0	Transistor, 2SA913	(R or S)	
Q728	1	1	1	HT109132B0	Transistor, 2SA913	(R or S)	
Q729	1	1	1	HD20011050	Diode, 1S1555		
Q730	1	1	1	HD20011050	Diode, 1S1555		
Q731	1	1	1	HD30046090	Zener, WZ-310		
Q732	1	1	1	HD30046090	Zener, WZ-310		
Q733	1	1	1	HD30046090	Zener, WZ-310		
Q734	1	1	1	HD30046090	Zener, WZ-310		
Q735	1	1	1	HD20011050	Diode, 1S1555		
Q736	1	1	1	HD20011050	Diode, 1S1555		
Q737	1	1	1	HD20003110	Diode, 1S2471		
Q738	1	1	1	HD20003210	Diode, 1S2471		
Q739	1	1	1	HD20003210	Diode, 1S2471		
Q740	1	1	1	HD20003210	Diode, 1S2471		
Q741	1	1	1	HV00004120	Varistor, MV-1		
Q742	1	1	1	HV00004120	Varistor, MV-1		
Q743	1	1	1	HV00004120	Varistor, MV-1		
Q744	1	1	1	HV00004120	Varistor, MV-1		
Q745	1	1	1	HH00007030	Thermistor, SDT-100		
Q746	1	1	1	HH00007030	Thermistor, SDT-100		
Q747	1	1	1	HH00007030	Thermistor, SDT-100		
Q748	1	1	1	HH00007030	Thermistor, SDT-100		
Q749	1	1	1	HD20005010	Diode, W06B		
Q750	1	1	1	HD20005010	Diode, W06B		
Q751	1	1	1	HD20005010	Diode, W06B		
Q752	1	1	1	HD20005010	Diode, W06B		
R701	1	1	1	GD05332140	Resistor, 3.3kΩ	±5% ¼W	
R702	1	1	1	GD05332140	Resistor, 3.3kΩ	±5% ¼W	
R703	1	1	1	GD05333140	Resistor, 33kΩ	±5% ¼W	
R704	1	1	1	GD05333140	Resistor, 33kΩ	±5% ¼W	
R705	1	1	1	GD05821140	Resistor, 820Ω	±5% ¼W	
R706	1	1	1	GD05821140	Resistor, 820Ω	±5% ¼W	
R707	1	1	1	GD05821140	Resistor, 820Ω	±5% ¼W	
R708	1	1	1	GD05821140	Resistor, 820Ω	±5% ¼W	
R709	1	1	1	GD05101140	Resistor, 100Ω	±5% ¼W	
R710	1	1	1	GD05101140	Resistor, 100Ω	±5% ¼W	
R711	1	1	1	GD05513140	Resistor, 51kΩ	±5% ¼W	
R712	1	1	1	GD05513140	Resistor, 51kΩ	±5% ¼W	
R713	1	1	1	GD05152140	Resistor, 1.5kΩ	±5% ¼W	
R714	1	1	1	GD05152140	Resistor, 1.5kΩ	±5% ¼W	
R715	1	1	1	GD05753140	Resistor, 75kΩ	±5% ¼W	
R716	1	1	1	GD05753140	Resistor, 75kΩ	±5% ¼W	
R717	1	1	1	GD05153140	Resistor, 15kΩ	±5% ¼W	
R718	1	1	1	GD05153140	Resistor, 15kΩ	±5% ¼W	
R719	1	1	1	GD05112140	Resistor, 1.1kΩ	±5% ¼W	
R720	1	1	1	GD05112140	Resistor, 1.1kΩ	±5% ¼W	
R721	1	1	1	GD05473140	Resistor, 47kΩ	±5% ¼W	
R722	1	1	1	GD05473140	Resistor, 47kΩ	±5% ¼W	
R723	1	1	1	GD05102140	Resistor, 1kΩ	±5% ¼W	
R724	1	1	1	GD05102140	Resistor, 1kΩ	±5% ¼W	
R725	1	1	1	GD05223140	Resistor, 22kΩ	±5% ¼W	
R726	1	1	1	GD05223140	Resistor, 22kΩ	±5% ¼W	
R727	1	1	1	GJ05222010	Resistor, 2.2kΩ	±5% ¼W	
R728	1	1	1	GJ05222010	Resistor, 2.2kΩ	±5% ¼W	
R729	1	1	1	GJ05182010	Resistor, 1.8kΩ	±5% ¼W	
R730	1	1	1	GJ05182010	Resistor, 1.8kΩ	±5% ¼W	
R731	1	1	1	GD05153140	Resistor, 15kΩ	±5% ¼W	
R732	1	1	1	GD05153140	Resistor, 15kΩ	±5% ¼W	
R733	1	1	1	GD05153140	Resistor, 15kΩ	±5% ¼W	
R734	1	1	1	GD05153140	Resistor, 15kΩ	±5% ¼W	
R735	1	1	1	GD05561140	Resistor, 560Ω	±5% ¼W	
R736	1	1	1	GD05561140	Resistor, 560Ω	±5% ¼W	
R737	1	1	1	GD05561140	Resistor, 560Ω	±5% ¼W	
R738	1	1	1	GD05561140	Resistor, 560Ω	±5% ¼W	
R739	1	1	1	RA02230050	Trimming Resistor, 22kΩ CR29R		
R740	1	1	1	RA02230050	Trimming Resistor, 22kΩ CR29R		
R741	1	1	1	GD05203140	Resistor, 20kΩ	±5% ¼W	
R742	1	1	1	GD05203140	Resistor, 20kΩ	±5% ¼W	
R743	1	1	1	GD05222140	Resistor, 2.2kΩ	±5% ¼W	
R744	1	1	1	GD05222140	Resistor, 2.2kΩ	±5% ¼W	
R745	1	1	1	GD05222140	Resistor, 2.2kΩ	±5% ¼W	
R746	1	1	1	GD05222140	Resistor, 2.2kΩ	±5% ¼W	
R747	1	1	1	GD05330140	Resistor, 33Ω	±5% ¼W	
R748	1	1	1	GD05330140	Resistor, 33Ω	±5% ¼W	
R749	1	1	1	GD05330140	Resistor, 33Ω	±5% ¼W	
R750	1	1	1	GD05330140	Resistor, 33Ω	±5% ¼W	
R751	1	1	1	GD05151140	Resistor, 150Ω	±5% ¼W	
R752	1	1	1	GD05151140	Resistor, 150Ω	±5% ¼W	
R753	1	1	1	GD05330140	Resistor, 33Ω	±5% ¼W	
R754	1	1	1	GD05330140	Resistor, 33Ω	±5% ¼W	
R755	1	1	1	GD05330140	Resistor, 33Ω	±5% ¼W	
R756	1	1	1	GD05330140	Resistor, 33Ω	±5% ¼W	
R757	1	1	1	GD05273140	Resistor, 27kΩ	±5% ¼W	
R758	1	1	1	GD05273140	Resistor, 27kΩ	±5% ¼W	
R759	1	1	1	GF05100140	Resistor, 10Ω	±5% ¼W	
R760	1	1	1	GF05100140	Resistor, 10Ω	±5% ¼W	
R761	1	1	1	GF05100140	Resistor, 10Ω	±5% ¼W	
R762	1	1	1	GF05100140	Resistor, 10Ω	±5% ¼W	

- (U) for U.S.A
- (C) for Canada
- (E) for Europe

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
R763	1	1	1	GD05100140	Resistor, 10Ω ±5% ¼W
R764	1	1	1	GD05100140	Resistor, 10Ω ±5% ¼W
R765	1	1	1	GD05100140	Resistor, 10Ω ±5% ¼W
R766	1	1	1	GD05100140	Resistor, 10Ω ±5% ¼W
R767	1	1	1	GJ05562010	Resistor, 5.6kΩ ±5% 1W
R768	1	1	1	GJ05562010	Resistor, 5.6kΩ ±5% 1W
R769	1	1	1	GJ05562010	Resistor, 5.6kΩ ±5% 1W
R770	1	1	1	GJ05562010	Resistor, 5.6kΩ ±5% 1W
R771	1	1	1	GD05101140	Resistor, 100Ω ±5% ¼W
R772	1	1	1	GD05101140	Resistor, 100Ω ±5% ¼W
R773	1	1	1	GD05101140	Resistor, 100Ω ±5% ¼W
R774	1	1	1	GD05101140	Resistor, 100Ω ±5% ¼W
R775	1	1	1	GF05330140	Resistor, 33Ω ±5% ¼W
R776	1	1	1	GF05330140	Resistor, 33Ω ±5% ¼W
R777	1	1	1	GF05330140	Resistor, 33Ω ±5% ¼W
R778	1	1	1	GF05330140	Resistor, 33Ω ±5% ¼W
R779	1	1	1	GF05240120	Resistor, 24Ω ±5% ¼W
R780	1	1	1	GF05240120	Resistor, 24Ω ±5% ¼W
R781	1	1	1	GF05240120	Resistor, 24Ω ±5% ¼W
R782	1	1	1	GF05240120	Resistor, 24Ω ±5% ¼W
R787	1	1	1	GW10332030	Resistor, 0.33Ω ±10% 3W
R788	1	1	1	GW10332030	Resistor, 0.33Ω ±10% 3W
R789	1	1	1	GW10332030	Resistor, 0.33Ω ±10% 3W
R790	1	1	1	GW10332030	Resistor, 0.33Ω ±10% 3W
R791	1	1	1	GW10332030	Resistor, 0.33Ω ±10% 3W
R792	1	1	1	GW10332030	Resistor, 0.33Ω ±10% 3W
R793	1	1	1	GW10332030	Resistor, 0.33Ω ±10% 3W
R794	1	1	1	GW10332030	Resistor, 0.33Ω ±10% 3W
R795	1	1	1	GJ05100030	Resistor, 10Ω ±5% 3W
R796	1	1	1	GJ05100030	Resistor, 10Ω ±5% 3W
R797	1	1	1	GJ05022020	Resistor, 2.2Ω ±5% 2W
R798	1	1	1	GJ05022020	Resistor, 2.2Ω ±5% 2W
C851	1	1	1	DK18103510	Ceramic Cap., 0.01μF 500V
C852	1	1	1	DK18103510	Ceramic Cap., 0.01μF 500V
C853	1	1	1	EA47706310	Electrolytic Cap., 470μF 63V
C854	1	1	1	EA47706310	Electrolytic Cap., 470μF 63V
C855	1	1	1	EA10701690	Electrolytic Cap., 100μF 16V
C856	1	1	1	EA10701690	Electrolytic Cap., 100μF 16V
C857	1	1	1	DF16102010	Film Cap., 0.001μF ±10% 50V
C858	1	1	1	DF16102010	Film Cap., 0.001μF ±10% 50V
C859	1	1	1	EA10701690	Electrolytic Cap., 100μF 16V
C860	1	1	1	EA33505090	Electrolytic Cap., 3.3μF 50V
C861	1	1	1	EA33505090	Electrolytic Cap., 3.3μF 50V
Q851	1	1	1	HD20013030	Diode, DS-133B
Q852	1	1	1	HD20013030	Diode, DS-133B
Q853	1	1	1	HT403132P0	Transistor, 2SD313 (D or E)
Q854	1	1	1	HT205072P0	Transistor, 2SB507 (D or E)
Q855	1	1	1	HT315091Q0	Transistor, 2SC1509 (Q)
Q856	1	1	1	HT107771Q0	Transistor, 2SA777 (Q)
Q857	1	1	1	HD30023090	Zener, WZ-071
Q858	1	1	1	HD30023090	Zener, WZ-071
Q859	1	1	1	HD20003210	Diode, 1S2471 Black
Q860	1	1	1	HD20003210	Diode, 1S2471 Black
R851	1	1	1	GJ05022010	Resistor, 2.2Ω ±5% 1W
R852	1	1	1	GJ05022010	Resistor, 2.2Ω ±5% 1W
R853	1	1	1	RT05332140	Resistor, 3.3kΩ ±5% ¼W
R854	1	1	1	RT05332140	Resistor, 3.3kΩ ±5% ¼W

REF. DESIG.	Q'TY			PART NO.	DESCRIPTION
	U	C	E		
R855	1	1	1	RT05222140	Resistor, 2.2kΩ ±5% ¼W
R856	1	1	1	RT05222140	Resistor, 2.2kΩ ±5% ¼W
R857	1	1	1	GJ05562010	Resistor, 5.6kΩ ±5% 1W
R858	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W
R859	1	1	1	RT05682140	Resistor, 6.8kΩ ±5% ¼W
R860	1	1	1	RT05333140	Resistor, 33kΩ ±5% ¼W
R861	1	1	1	RT05273140	Resistor, 27kΩ ±5% ¼W
R862	1	1	1	GJ05472010	Resistor, 4.7kΩ ±5% 1W
R863	1	1	1	RT05472140	Resistor, 4.7kΩ ±5% ¼W
R864	1	1	1	RT05562140	Resistor, 5.6kΩ ±5% ¼W

## 12. TECHNICAL SPECIFICATIONS

● FOR U.S.A. MODEL ONLY

### AMPLIFIER SECTION

#### RATED POWER OUTPUT, MINIMUM CONTINUOUS

AVERAGE POWER PER CHANNELS, BOTH CHANNELS DRIVEN .....	90 WATTS
POWER BAND .....	20 Hz to 20 kHz
TOTAL HARMONIC DISTORTION .....	0.03%
LOAD IMPEDANCE .....	8 OHMS

#### RATED POWER OUTPUT, MINIMUM CONTINUOUS

AVERAGE POWER PER CHANNELS, BOTH CHANNELS DRIVEN .....	113 WATTS
POWER BAND .....	20 Hz to 20 kHz
TOTAL HARMONIC DISTORTION .....	0.06%
LOAD IMPEDANCE .....	4 OHMS

I.M. Distortion (IHF method, 60 Hz  
and 7 kHz mixed 4:1  
at rated power output)

at 8 ohm load impedance .....	0.03%
at 4 ohm load impedance .....	0.09%
Damping Factor (at 20 Hz) .....	60
Sensitivity (at MAIN IN) .....	1.5 V
Impedance (at MAIN IN) .....	36 k ohms
Frequency Response for Power Amp Only (at 1 watt output, 20 Hz to 20 kHz) ....	±0.2 dB
S/N Ratio (MAIN IN, "A" Weighted) .....	110 dB

### PREAMPLIFIER SECTION

#### Phono

Input Overload at 1 kHz .....	310 mV
Equivalent Input Noise ("A" Weighted) .....	0.48 $\mu$ V
Dynamic Range (Dynamic Range is the ratio of input overload to equivalent input noise) .....	117 dB
Input Sensitivity .....	1.8 mV
Input Impedance .....	47 k ohms
Frequency Response, RIAA 20 Hz to 20 kHz ..	±0.2 dB
Signal-to-Noise Ratio ("A" Weighted) (at rated output and 7.75 mV input) ....	83 dB
High Level (Aux and Tape)	
Input Sensitivity .....	180 mV
Input Impedance .....	20 k ohms

#### Frequency Response

(includes Power Amp) . . . 5 Hz to 60 kHz ±1.0 dB  
Signal-to-Noise Ratio ("A" Weighted)  
(ref. to rated output and 775 mV input) . . . 93 dB

#### Output Levels

Tape Out (ref. 7.75 mV at Phono inputs) . . . 775 mV  
Pre-Out (ref. 180 mV at Aux inputs) . . . . . 1.5 V  
(ref. 500 mV at Aux inputs, Main  
Amp disconnected) ..... 4.2 V |

#### Output Impedance

Tape Out ..... 330 ohms || Pre-Out ..... | 220 ohms |

### GENERAL

Power Requirements .....	120 VAC 60 Hz
Power Consumption at rated output, both channels operating .....	370 Watt
Idling Power (Volume Control at zero) .....	65 Watt
Dimensions	
Panel Width .....	416 mm (16-3/8")
Panel Height .....	146 mm ( 5-3/4")
Depth .....	316 mm (12-3/8")
Weight	
Unit alone .....	15.0 kg (33.0 lbs)
Packed for Shipment .....	17.0 kg (37.4 lbs)



● FOR EUROPEAN MODEL ONLY

Audio Section

POWER OUTPUT AT 1% DISTORTION .....	160 W
RATED POWER OUTPUT, 1 kHz .....	113 W
TOTAL HARMONIC DISTORTION AT RATED POWER OUTPUT, 1 kHz .....	0.09%
I.M. DISTORTION AT RATED POWER OUTPUT (I.H.F. METHOD, 300 Hz AND 10 kHz MIXED 4:1 AT RATED POWER OUTPUT) .....	0.09%
POWER BANDWIDTH, ½ RATED POWER OUTPUT .....	7 Hz ~ 70 kHz
LOAD IMPEDANCE .....	4 OHMS

POWER OUTPUT AT 1% DISTORTION .....	105 W
RATED POWER OUTPUT, 1 kHz .....	90 W
TOTAL HARMONIC DISTORTION AT RATED POWER OUTPUT, 1 kHz .....	0.03%
I.M. DISTORTION AT RATED POWER OUTPUT (I.H.F. METHOD, 300 Hz AND 10 kHz MIXED 4:1 AT RATED POWER OUTPUT) .....	0.03%
POWER BANDWIDTH, ½ RATED POWER OUTPUT .....	7 Hz ~ 70 kHz
LOAD IMPEDANCE .....	8 OHMS

Damping Factor, SP Output	
40 Hz .....	60
1 kHz .....	50
12.5 kHz .....	45

Frequency Response	
Phono 40 Hz ~ 1.6 kHz .....	±0.5 dB
Aux 40 Hz ~ 1.6 kHz .....	±0.5 dB
Main In 40 Hz ~ 1.6 kHz .....	±0.2 dB

Signal-to-Noise Ratio, 1 kHz	
Phono .....	56 dB
Aux .....	56 dB
Main In .....	58 dB

Input Sensitivity, 1 kHz (Rated Input Voltage)	
Phono .....	1.8 mV
Aux .....	180 mV
Main In .....	1.5 V

Input Impedance, 1 kHz	
Phono .....	47 k ohms
Aux .....	20 k ohms
Main In .....	36 k ohms

Phono Equivalent Input Noise .....	1.0 µV
Phono Dynamic Range .....	110 dB
Phono Input Capacitance .....	100 pF
Channel Balance	

Phono 0 ~ -40 dB .....	2.5 dB
Aux 40 Hz ~ 16 kHz .....	2.0 dB
Main In .....	1.0 dB

Interchannel Crosstalk	
Phono 1 kHz .....	43 dB
250 Hz ~ 10 kHz .....	40 dB
Aux 1 kHz .....	45 dB
250 Hz ~ 10 kHz .....	33 dB
Tape 1 kHz .....	45 dB
250 Hz ~ 10 kHz .....	33 dB
Main In 1 kHz .....	55 dB
250 Hz ~ 10 kHz .....	50 dB

Intersource Crosstalk, Worst Point	
1 kHz .....	45 dB
250 Hz ~ 10 kHz .....	33 dB

Output Voltage, 1 kHz	
Tape Out .....	0.18 V
Pre Out .....	1.5 V

Output Impedance, 1 kHz	
Tape Out .....	330 ohms
Pre Out .....	220 ohms

Power Consumption	
Idling .....	60 W
Rated Power, 1 kHz .....	350 W

General

Power Requirements .....	220 V ~, 50 Hz
(E and N versions are featuring an external voltage selector for use on 110/120/240 V. Other versions can be converted by a qualified technician to operate on 110/120/240 V.)	

Power Consumption at rated output, both channels operating .....	350 W ±50W
Idling Power .....	60 W ±15W

Semiconductor Complement	
Transistors .....	83
Diodes .....	50
Field Effect Transistors .....	4

Dimensions	
Panel Width .....	416 mm (16-3/8 inches)
Panel Height .....	146 mm ( 5-3/4 inches)
Depth .....	316 mm (12-3/8 inches)

Weight	
Unit Alone .....	15.0 kg (33.0 lbs)
Packed for Shipment .....	17.0 kg (37.4 lbs)